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Post-Olympics Assessment of European HDTV

92WS0794A Duesseldorf VDI NACHRICHTEN
in German 7 Aug 92 p 3

[Article by Regine Boensch: "TV of the Future With Beauty Marks"]

[Text] Duesseldorf—The developers of Europe's high-resolution television are proud of themselves. The big test during the Olympic Games brought a whiff of the TV of the future. But the large masses of viewers will still be able to receive the next Olympics in Atlanta with conventional technology. A number of obstacles must still be overcome in order to market HDTV.

The rows of viewers in the Montjuic Olympic stadium are filled to overflowing. There is a group of Canadian fans, in the center of the picture a Japanese couple and at far right the woman with the green hat is changing her seat. Anyone who during the last few days did not follow the track and field competition on his domestic 'boob tube' but in the display seats for the future television standard HDTV, was able to recognize details unimagined until now.

"It works," was also Wolf Kaeher's sparse comment. The technical moderator on the stage of German HDTV is entirely satisfied with Europe's high-resolution television. At the initiative of the Research Ministry, the equipment and chip industry, broadcast facilities and Telekom joined together on this stage in order jointly with their European partners to plan the introduction strategy for the television of the future. Barcelona was declared the big test for it: More than 100 hours of high-resolution signals were sent from the Catalan metropolis.

And Kaehler knows how hard one was still working on details before the gigantic spectacle: "Details, from the cameras to the broadcast technology to the decoders, were improved." And, if now, as happened frequently in the last few days, the image breaks up or the camera abruptly dips into the crowd, the protagonists in this new technology have an excuse ready for that as well. "That is a just test broadcast," declares Hans Engelkamp from Finnish Nokia.

About 1,000 experts are using the Olympic Games in order to study HDTV (High Definition Television) more thoroughly. They repeatedly meet with the same problem in their analyses: The high-resolution images must be transmitted without overtaxing the valuable property of the frequencies. In this country high-resolution TV has only been allocated a 6 to 7 MHz bandwidth.

A fact which forced the developers to compress the streams of data. And this is why still portions of the image are recorded as seldom as possible and moving ones as often as necessary. A technical compromise, which also brings up unsharp effects, as with the picture of a swimmer, who grabs the edge of the pool surprisingly quickly for the camera. And with some hockey players with red socks it appears as if they were painted over afterwards with a red brush stroke.

Effects, which in the opinion of the HDTV protagonists only stand out to the trained eye. The nonexpert watches television quite differently. Whether this is true will become clear after the Olympic Games. Because for the first time, at 800 locations scattered across all of Europe,

John and Mary Consumer were able to enjoy this new technology, which will stage its entry into the market no earlier than the mid-1990's.

In the midst of other television sets, the Schossau company in Duesseldorf also has a particularly large test set, surrounded by the mirror of medals and the five Olympic rings. "Reactions to this HDTV display are quite varied," relates department head Guenther Roth. "Some stand there fascinated, some don't even notice the difference between it and the other sets." But Roth already has interested buyers, whom he has to put off until 1994-95.

"Seeing salmon and only being able to buy imitation salmon," says an annoyed, disappointed female customer in another store. She refers to the European transitional standard D2-MAC. Since most HDTV experts like to report on their high-resolution successes during the Olympics, they prefer to be silent when talking about D2-MAC.

The Europeans wanted to use this transitional standard to take an "evolutionary" approach toward HDTV. The consumer can adjust to the new technology slowly, it was said up until a year ago in advertising brochures. And thus "D2-MAC-capable" receivers can already be found in television stores today and occasionally show satellite programs from ARD [Group of Nonprofit Broadcast Stations of the FRG] and ZDF [Second German TV channel] in this standard.

D2-MAC sends the signal in the same way as its high-resolution successor. This standard is also based on the large movie format. It also sends only 626 lines and is therefore just as far removed from high-resolution as today's regular Pal standard. Olympia has now delivered a number of large-format pictures over the Einsplus satellite channel. And, owners of D2-MAC television sets were promised, its decoder chip understands the high-resolution signals.

But while the HDTV pictures on the test sets were brilliant, on the approximately 40,000 D2-MAC sets in the FRG they were disappointing. "Squiggly," Leo Danilenko calls the D2-MAC picture. And the chief engineer of WDR [West German Broadcasting] also has an explanation for this. The individual pictures are always produced through a multitude of blocks containing 16 x 16 pixels. With a still picture one-fourth of the block is transmitted every 2 ms. These interlinked picture contents must then be put back together again. In the high-resolution variant the four cycles are first stored and then put together, but D2-MAC has no picture storage.

"So D2-MAC is not HDTV-compatible," Danilenko concludes. And Michael Bobrowski, an electronics expert from the Group of Consumer Unions, expresses himself even more clearly: "D2-MAC is obsolete technology for me." So is this an end to the gradual approach for Europe to the television of the future?

One thing is clear even today to chief engineer Danilenko: "The wide screen will catch on." In the future increasingly more television sets will thus tempt people with movie format screens. Says Danilenko: "For a long time these will

be multistandard sets, however, which understand everything that is broadcast." In the future the viewers will then decide not only the program but also the standard by pushing a button.

But the developers of even today's multistandard sets have made it hard for people to enjoy them. "I face my television the way I do my PC," groans a D2-MAC pioneer referring to the many buttons on this remote control. What is just a new game to technically advanced people is torture for untrained viewers. The special dealers are opening up a new, lucrative field of service in this respect.

Operating comfort, along with inexpensive image reproduction at home, is among the technological bottlenecks which must be overcome, according to Research Minister Riesenhuber, before the future high-resolution TV technology can dare enter the mass market. Not until then can the enormous development costs for high-resolution television be recovered. At any rate, the technical HDTV adventure in Europe will have cost 1.25 billion German marks [DM] by the end of this year.

Eurafrica Submarine Cable Activated

93WS0057D Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 7 Sep 92 p 1

[Text] The Eurafrica fibre-optic submarine cable linking France, Portugal, Morocco and the Island of Madeira entered service on August 19, 1992.

The new cable, which is 3,280 km long, was installed by the French company Submarcom. Depending on the segment, it contains one or two pairs of fibre-optic cables and is equipped with S560 systems, utilising 1.5 micron laser technology, which allows transmission of information at 565Mbit/s per fibre pair.

The cable's landing points are located at St. Hilaire de Riez (France), Sesimbra (Portugal), Casablanca (Morocco) and Funchal (Madeira). In addition to adding capacity for increased digitalisation of the telecommunications networks linking the three countries, the system will also handle digital traffic via Madeira to South Africa via the SAT-2 system (due to enter service in 1993) and to Central and South America via the Columbus 2 system (scheduled for service in 1994). Digital extensions will also transmit through St. Hilaire de Riez to serve the rest of Europe via the French domestic network, and to North America via the TAT-9 transatlantic cable.

The Eurafrica cable represented an investment of approximately US\$150 million by the 21 telecommunications operators which own the system. The two largest investors

are Portugal's Compania Portuguesa Radio Marconi with a 30 percent shareholding, and France Telecom's Franca Cables et Radio subsidiary with a 28 percent stake.

Denmark-Russia Submarine Fiber-Optic Cable System Completed

93WS0073G Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 26 Oct 92 p 1

[Unattributed article: "Denmark-Russia: Submarine Cable Link Completed"]

[Text] On October 9, Northern Telecom's STC Submarine Systems subsidiary completed the installation of the Denmark-Russia submarine optical fibre cable system. The system represents the first digital cable link to Russia and the first direct cable between Denmark and Russia. The project was carried out by Telecom Denmark, and GN Great Northern Telegraph Company in co-operation with A/O Intertelecom, Russia's international telecoms operator.

The 1,210 km-long cable has been ploughed approximately 60cm into the seabed of the Baltic between Kingisepp near St. Petersburg in Russia and Karlslunde, near Copenhagen in Denmark. Further details of the project were published in ITI issues 308 and 330.

The link is scheduled to enter operation on March 1st 1993, when additional links from Kingisepp to St. Petersburg (124km) and to Moscow (810km) have been established. These links will consist of 140 Mbit/s microwave systems supplied by NEC of Japan under a turnkey contract awarded to Sumitomo Corporation. Telecom Denmark and GN Great Nordic also carry the overall responsibility for the establishment of this part of the project. Altogether, the project has required investments totalling DKr580 million. In February of this year, more than 20 other PTOs from around the world purchased capacity on the system which will be used for international voice, data and possibly video transmissions between the CIS and the rest of the world, with re-transmission via Telecom Denmark's station in Albertslund near Copenhagen.

The two Danish partners and intertelecom are also involved in a project to lay a submarine cable between Russia, Japan and Korea (R-J-K), and a land-based fibre-optic link between Nakhodka and Khabarovsk in eastern Russia. Prequalification applications were recently called to tender for these two projects (see ITI issues 355 & 359).

Telecom Denmark said that the ultimate plan is for the Denmark-Russia and the R-J-K cables to be connected via land-based cables crossing the Russian continent.

ANGOLA

National Telecommunications Project Announced

92WT0227A Luanda JORNAL DE ANGOLA
in Portuguese 25 Jul 92 p 5

[Article by Jorge Airosa]

[Text] The national telecommunications service in Angola will definitely be in place beginning next September, linking at least the provincial capitals, according to what Dr. Luis D'Eca Pinheiro, official of the Central Communications Department of the Marconi Portuguese Radio Company, told this newspaper.

Five 7.5-meter parabolic antennas will be installed in the Lukapa, Uige, Cabinda, Benguela, and Onjiva Zones for that purpose, comprising the foundation for the domestic long distance network (DOMSAT) that will, of course, be connected to the one in Luanda, which in this case will play the role of mother antenna.

Currently, two of the five antennas have already arrived in the country and are now being subjected to detailed and continuous testing "by qualified technicians" at the Cacuaco Land Station for Satellite Communications, after which they will be transported to and installed at their respective destinations "in order to avoid any later delays that might damage our image."

This project will cost about \$11 million. It is backed by the Portuguese company Lusa and is the result of a contract signed with the Angolan Government last 1 December, "when we assumed the commitment to turn plans into reality within a period of 10 months," D'Eca Pinheiro said.

Our source also indicated that the tasks remaining to be completed under the aforementioned contract include reestablishing the land connection with Sumbe, completing the television signal transmission from Luanda, creating the conditions for reception anywhere on Angolan territory, equipping seven Angolan sites for television signal reception and later transmission, and improving current land connections by microwave and tropodifusion, as well as some telephone facilities.

D'Eca Pinheiro also claimed that with the installation of the telecommunications network in our country, it will also be possible to receive and transmit telephone calls and faxes from and to any provincial capital. As is known, responsibility for granting and providing DDI (international direct dialing) falls to Enatel [National Telecommunications Company]. "In any case, I can state that the equipment is sufficient for both purposes, that is, both objectives, with Angola thus being connected to the rest of the world, which seems to me to be everyone's wish."

Apart from this project, he said, Marconi Global Telecommunications has "already presented a proposal to the Angolan Government demonstrating our intent to create a joint venture to provide domestic and international public

telecommunications, which would involve privatizing the Angola-Telecom company, with our participation."

In addition, D'Eca Pinheiro said that authorization has been granted by the Ministry of Transportation and Communications to create, on a trial basis, a joint venture between Telemovel Servico and Enatel, which in theory would link the main urban centers, "which does not preclude later extending it throughout the entire territory. We have already presented the technical-economic feasibility study. We are only awaiting the final decision with respect to the starting date. I am also able to say that the aforementioned authorization also covers what is technically referred to as VSAT and data communications."

Marconi Global Telecommunications is a telecommunications company headquartered in Lisbon. It has six local representative offices in Brussels, Washington, Sao Paulo (Brazil), Macau, Angola, and Mozambique and provides operational services in more than 14 countries. The company is primarily dedicated to international telecommunications through a network of underwater cables and satellites, mobile maritime service, television broadcasting, corporate communications via satellite (VSAT), land transmission, value-added services, local public telecommunications, and technical assistance and consulting.

To conclude, D'Eca Pinheiro stated that Eptel (Public Telecommunications Company) now plays the role that Marconi did from 1927 to 1976. Meanwhile, "We are negotiating with the Angolan Government, so that through mutual agreement and in a gradual manner, the Angolan authorities will acquire ownership of the company in Angola, leaving us with responsibility for the area of technical assistance."

Describing the training of Angolan cadres, he said that at first "we had 55 Portuguese technicians here. However, we focused strongly on training local cadres—in the United States, in Portugal, and locally—and today we have only seven.

SOUTH AFRICA

Altech Announces Major Restructuring

93WT0015A Johannesburg ENGINEERING NEWS
in English 25 Sep 92 pp 1-2

[Text] The Altech group has announced a major restructuring of its telecommunications interests into a single operation.

A new company, Altech Telecomms, has been formed as a result of the merger between Altech Public Networks, Telsis and Messina Electronics.

Altech said the objective of the restructuring was to capitalise on the synergies of the three separate, but complimentary, operations to provide a comprehensive telecommunications service to both the private and public sectors.

SUB-SAHARAN AFRICA**JPRS-TTP-92-010
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Altech Telecomms will consist of four principle operating divisions:

- Switching division under the management of John Pitout
- Transmission division under the management of Thinus Potgieter
- Telematics division under the management of Charles Groves
- Telsis division under the management of Wally Watson.

The latter will provide telecommunications systems design, project management, and infrastructure provisioning services, accepting complete turnkey responsibility for the execution of projects.

The other three divisions will focus on their particular customer bases which, according to Altech, will ensure enhance performance in all areas of customer service.

These divisions will in turn be supported by manufacturing, financial, human resources and commercial divisions as in the past.

Major Areas for International Cooperation Listed
93P60050A Beijing ZHONGGUO DIANZI BAO
in Chinese 23 Sep 92 p 1

[Article by Jin Jianguo [6855 1696 0948]: "Nation Sets Eighth 5-Year Plan Sino-Foreign Cooperative Projects in Communications Industry: Third China International Communications Conference Convened in Beijing"]

[Summary] At the Third China International Communications Conference convened in Beijing on 16 September, MMEI Vice Minister Zeng Peiyan specified the 10 major Sino-foreign cooperative projects for the nation's telecommunications industry in the Eighth 5-Year Plan. These projects are: 1) Establishment of an R&D center for communications system software and communications ASICs; 2) development of stored-program-controlled (SPC) telephone switches, including end-office digital switches, rural switches, and a system for manufacturing digital PABX parts and complete units, as well as construction of end-office switch production bases in Beijing, Tianjin, and Shanghai and of an R&D center for developing a new generation of end-office digital switches; 3) development of mobile communications, including a cellular system, pagers, police/emergency mobile phones, industrial (railroad and mining) mobile phones, adaptive single-sideband communications equipment and other special-purpose mobile communications equipment; 4) importation of production lines and design technology for DS4-and-higher [i.e., 140 Mbps-and-higher] fiber-optic communications systems, and establishment of an organization for developing DS5 (662 Mbps in the SDH [synchronous digital hierarchy]) fiber-optic communications systems; 5) development of satellite communications (SATCOM), including importation of digital-telephone-compatible VSATs [very small aperture terminals], low-bit-rate VSATs, and medium-capacity trunkline SATCOM systems; 6) development of digital microwave (DMW) communications, including 480-circuit-and-higher mid-to-high-capacity DMW communications equipment, point-to-multipoint DMW communications equipment, and TV microwave transmission equipment; 7) development of communications terminal equipment, including G3 FAX machines, multifunctional telephones, videophones, data terminals, and secure transmission devices, and construction of facilities for manufacturing G3 FAX machine parts and entire units; 8) development of navigational communications equipment, including air and harbor traffic control systems, global marine search-and-rescue systems, and GPS [global positioning systems] receivers; 9) resolution of the narrow-band integrated services digital network [ISDN] application problem, and active promotion of research on broadband ISDN systems; and 10) joint construction by MMEI and the Weihai Municipal Government of the Weihai Electronics Industrial Park's Communications Mini-Zone, oriented toward development of high-speed FAX machine key components and cellular mobile communications systems, as well as other economic equipment in the future, with the eventual goal of establishing an economics development/export base.

It is understood that the nation's Eighth 5-Year Plan telecommunications market demand is quite high: telephone switches for 35 million lines, 900,000 units of

wireless mobile communications equipment of various types, 3 million wireless pagers, 1 million kilometers of optical fiber, 100,000 kilometers of fiber-optic cable, 100,000 optoelectronic terminals, 130,000 kilometers of DMW circuits, 2,000 SATCOM earth stations, 10,000 satellite VSATs, and 30 million telephone sets.

Beijing Buys U.S. Telecommunications Satellite

OW0212075592 Beijing XINHUA in English
0721 GMT 2 Dec 92

[Text] Beijing, December 2 (XINHUA)—China bought a telecommunications satellite from a U.S. company today to boost its capacity for TV broadcasting, telephone service and data transmission.

The satellite, which is in orbit in the western hemisphere, is the first satellite China has bought from a foreign country.

According to the contract signed between China Telecommunications Broadcast Satellite Corporation and the GTE Spacenet of the United States, the satellite will be directed to the eastern hemisphere next April and finally fixed at 115.5 degrees east after two months, traveling over 100,000 kilometers.

By then, the satellite will provide 10,000 lines in satellite telecommunications which can transmit over ten TV programs for the Chinese audience, thus greatly easing the shortage in China's existing telecommunications system.

According to sources from the Ministry of Posts and Telecommunications, China has built two satellite communications earth stations in Beijing and Shanghai, connecting over 2,000 international telecommunications lines. And satellite communications have provided over 85 percent of the international telecommunications business apart from the areas from Guangzhou to Hong Kong and Macao.

By now, China has built over 30,000 TV receiving stations across the country and the programs by China Central Television Station can reach more than 90 percent of the country.

Meanwhile, a total of 24 transmitters on three Chinese satellites and transmitters leased overseas are working to provide satellite telecommunications services. The new satellite can provide another 36 transmitters.

Program-Controlled Telephones To Be Imported From Canada

OW2910044192 Beijing XINHUA in English
1600 GMT 28 Oct 92

[Text] Xian, October 28 (XINHUA)—China is to import another 3 million lines of DMS [expansion unknown] program-controlled telephone exchange from Canada in the next few years to upgrade China's telecommunications systems.

This was revealed at a contract signing ceremony on the establishment of a joint venture, the Youdian-Beidian Technical Cooperative Company, here today.

The joint venture, established by the China Communication Construction Corporation, the Xian Institute of Posts

and Telecommunications and the Northern Telecom Ltd of Canada, has a total investment of 6.25 million U.S. dollars. The Canadian side holds 60 percent of the shares and the Chinese side 40 percent.

The joint venture will mainly provide technical training, installation and servicing for DMS telephone exchange users in China and other Asian countries.

Recently, the Ministry of Posts and Telecommunications has decided to import 3 million lines of program-controlled telephone exchange from Canada with the 400 million U.S. dollars loans provided by the Canadian Government.

The joint venture is the first one established by the ministry with a foreign partner and the second one set up by the Canadian company.

About 60 million lines of the Canadian program-controlled telephone exchanges are being used in more than 20 countries of the world. China has so far imported about 700,000 lines.

Experts here said that the establishment of the joint venture marked closer cooperation between the two countries in the area of high technology.

MPT Outlines Communications Development Targets for 1995, 2000

Main Points Listed

93P60023A Beijing KEJI RIBAO in Chinese
17 Sep 92 p 1

[Article by Ji Hongguang [1323 3163 0342]: "MPT Sets New Communications Development Targets for 2000"]

[Summary] Beijing, 16 Sep (KEJI RIBAO wire report)—At the Third China International Communications Conference convened today, MPT [Post and Telecommunications] Vice Minister Yang Xianzu announced new domestic development targets before the scholars from China and abroad. Following upon the 24.5 percent continuous annual growth of the Seventh 5-Year Plan, the nation's telecommunications industrial output for January-August this year grew 45.1 percent compared to the same period last year, long-distance telephone traffic grew 61.8 percent, and urban telephone traffic grew 46.5 percent. The new development targets, intended especially to raise the telephone dissemination rate and the spread of digital communications, include the following: gross capacity of the national telephone network is to grow from 48 million lines in 1995 [end of Eighth 5-Year Plan] to 96 million in 2000, representing 16 times the amount for 1980; the total number of telephones is to grow from 31 million in 1995 to 65 million in 2000; the national telephone dissemination rate is to grow from the current 1.26 percent to 2.5 percent in 1995 (with a 20 percent rate for municipalities such as Beijing, Shanghai, Tianjin, and Guangzhou, and the principal seacoast open cities) and to 5 percent in 2000 (with a 30-40 percent rate for the municipalities and major seacoast cities); 32,000 kilometers of high-capacity province-level fiber optic cable trunklines, 15,000 kilometers of new and expanded inter-provincial digital microwave trunklines, and 19 satellite earth stations are to be completed by 1995; long-distance

automatic switching capacity is to grow from 1.2 million terminals in 1995 to 3.5 million in 2000; and long-distance service circuits are to grow from 520,000 in 1995 to 1.4 million in 2000.

More on Fiber Optic Lines

93P60023B Beijing DIANXIN JISHU in Chinese
No 9, Sep 92 p 46

[Unattributed article: "Ministry of Posts and Telecommunications Lays Out New Communications Development Targets"]

[Summary] In addition to the targets specified above, China in the next three to five years is to complete construction of over 400,000 additional long-distance telephone lines in a national fiber-optic-cable backbone transmission network centered on Beijing. At present, fiber-optic-cable trunkline construction of 22 lines is unfolding, including two Beijing-Northeast lines totaling 4,700 km and running from Beijing to Tianjin and Tangshan and on to the entire North China area; the Beijing-East China line running from Beijing to Nanjing and Shanghai; a Shanghai-South China line running from Shanghai to Fujian Province and on to Guangdong Province; Beijing-South Central-Southeast lines running from Beijing to Wuhan and Guangzhou (overhead cable and a separate buried cable); and Beijing-Northwest lines running from Beijing to Lanzhou, Beijing to Shanxi and Shaanxi Provinces, and Shaanxi to Gansu Province.

Government Boosts Posts, Telecommunications Networks

OW0511081192 Beijing XINHUA in English
0731 GMT 5 Nov 92

[Text] Chengdu, November 5 (XINHUA)—China has boosted its posts and telecommunications over the past decade to pave the way for its economic development.

At present, there are 1.4 telephone sets for every 100 people. In most open coastal areas and large and medium-sized cities, the telephone popularization rate surpasses five percent.

The number of telephones in Zhuhai, one of China's five special economic zones in Guangdong Province, has reached 28 for every 100 persons, ranking first in the country.

However, there were only 0.43 telephones for every 100 people a decade ago.

According to an on-going national work meeting on the planning of posts and telecommunications in this capital of Sichuan Province, the increased speed of both postal traffic and telecommunication capacity set a record in the first nine months of this year.

Postal traffic totalled 20.4 billion yuan (about 3.7 billion U.S. dollars), an increase of 39.4 percent over the same period of last year.

At present, 1,317 counties and cities across the country have joined the domestic automatic dialing network, and people in 571 counties and towns can dial direct to about 200 countries and regions.

China's posts and telecommunications trade has developed even more rapidly since the seventh five-year plan period (1986-90).

Altogether 20.2 billion yuan (about 3.7 billion U.S. dollars) were used in constructing postal and telecommunications facilities during this period. The amount of investment in this field was 8.6 billion yuan (about 1.6 billion U.S. dollars) last year and is expected to reach 14 billion yuan (about 2.6 billion U.S. dollars) this year.

Government Determines Goal for Hi-Tech Communications

OW3110213792 Beijing XINHUA Domestic Service in Chinese 1212 GMT 30 Oct 92

[By RENMIN RIBAO reporter Kong Xiaoning (1313 2556 1337) and XINHUA reporter Zhuo Peirong (0587 1014 2837)]

[Text] Beijing, 30 October (XINHUA)—At the report meeting today on the telecommunication technology strategic goal for the high-technology research and development plan (863 plan), the State Council leading group for coordination of high technology plans officially determined the strategic goal of this project.

According to this goal, China's development of high-technology telecommunications will adhere to the principle of "facing the whole network and highlighting the key." By pooling limited funds, it will strive to achieve before the year 2000 breakthroughs in key technologies that need to be urgently resolved in the domestic telecommunication network. For instance, in the research of high-speed optic fibers, it is expected to increase the communication lines in telecommunication optic fibers by over 10 times; in the research of integrated exchange equipment, voice, data, and images can be exchanged at the same time; in the research of individual mobile telecommunications equipment, a new generation of high-quality digital cordless telephones will be developed; and the achievements of research in intelligent network technology will help to greatly improve the operating efficiency of telecommunications networks and generate marked economic returns.

In addition, during the process of moving toward the general goal, development of the 863 telecommunications technology will fully capitalize on the favorable conditions brought about by the close ties between the telecommunications industry and social, political, and economic lives, and by the great market demand. In the two areas of "individual telecommunications network" and "multi-medium terminals," the project is integrated with the market and has strived for social support from the onset of research, blazing a new trail for transforming technological achievements into industries.

TV Becomes More Popular in China

HK3010110192 Beijing CHINA DAILY in English 30 Oct 92 p 5

[Article from the "Culture" page, by Xiao Xiao: "China Sinks in TV Cesspool"]

[Text] First frozen food; now this.

China is copying another staple of Western culture, though under a slightly different moniker. Two newspaper readers recently warned in a letter to the editor that China is in danger of succumbing to the dreaded "television disease."

The sound you just heard was ten million couch potatoes right in your own country hoisting beers to honour their new brethren.

In China, many people worry that children and young Chinese are watching too much television, and that their ability to read and write is declining. It sounds familiar.

A survey of 300 youngsters in Shanghai last year showed that, on average, they devoted half of their leisure time to watching television. And two-thirds of them spent an equal amount of time—two-and-a-half hours—reading kungfu, romance and detective fiction.

Another survey of school-age children in Wuahn, a major industrial city in Central China found that only half of those surveyed liked reading; the other half said they read very little.

Studies show that almost 90 percent of primary and middle school students say they watch television for more than one hour a day, even though they admitted they were constantly warned that watching too much TV would affect their studies.

Of 300 small children questioned in a Wuhan kindergarten, all said they loved watching TV.

This adds up to a definite trend toward more television-watching among Chinese youngsters. It hasn't been this way for very long.

Television started to become a popular entertainment medium only about a dozen years ago.

In 1977, TV sets were a luxury that only about 3 percent of urban Chinese families could afford.

But with increased prosperity to China have come increased numbers of couch potatoes.

Today, some 185 million sets flash on every day, drawing a joint viewership of more than 600 million, twice the total population in America.

During the Barcelona Olympic Games, tens of millions of Chinese viewers stayed up late to catch the games' opening ceremonies and other programmes relayed through the national television network: China Central Television (CCTV).

And television is quickly replacing printed material as the major source of news for most Chinese.

The highest-rated Chinese programme is CCTV's 30-minute daily news at 7 pm. A sample survey in Beijing found that 63 percent of those surveyed got their news from television via CCTV and local TV stations.

Although sports, cartoons and regular business and arts programmes also receive good ratings, CCTV devotes 46 percent of its 30 hours of daily programming to entertainment composed largely of variety shows and Chinese-made television movies and soap operas.

Over the years, there have been several major television series, similar to "Growing Pains" and "Little House on

the Prairie" on American television, that virtually emptied the streets of major urban centres when they aired.

One of those was "Expectations," a 50-part series, which took place against the backdrop of the "cultural revolution" (1966-76). It aired in late 1990 and set urban residents buzzing at dinner tables, on the bus to work and during work breaks about the fate of the two families featured in the series.

"Expectations' threw us into the whirlwind of emotions and memories," said a Chinese woman who now works in a Japanese company in the San Francisco area.

She said Chinese scholars and students in the Bay Area must wait days or even weeks before they get a chance to borrow video cassettes of the series.

First Pay-Per-View TV System Developed

*OW0511012092 Beijing XINHUA in English
1507 GMT 4 Nov 92*

[Text] Beijing, November 4 (XINHUA)—The TV industry on the Chinese mainland will see a major breakthrough in its path of commercialization as the first pay-per-view TV system starts operation next year in east China's Anhui Province.

The system was jointly developed by the Shenzhen TV Station, the Shenzhen Research Institute of Broadcast and TV Technology and the Anhui TV Station. It is also a part of the Shenzhen TV organizations' plan to cooperate with inland provinces in developing pay-per-view TV systems.

The system applies the encoding and decoding techniques developed by the Shenzhen Research Institute of Broadcast and TV Technology. It transmits encoded TV signals which can be received by an ordinary TV set connected to a decoding machine, with the help of a cipher card.

The system is scheduled to broadcast 18 hours a day, as its program arrangement will give full consideration to the demands of audiences with different tastes.

At present, TV stations at all levels on the mainland are all run by the government, with their revenue coming only from advertising and government subsidies.

The development of the pay-per-view TV system is regarded as a bold attempt by the mainland TV industry to cast off the old mode of operation.

Experts believe that, compared with cable TV, which is now very popular worldwide, the pay-per-view TV is more suitable for China, a developing country which is short of money, backward in urban infrastructure construction and has a large and scattered rural population.

They predict that the pay-per-view TV will enjoy broad prospects in China, as it requires relatively simple engineering and investment.

Market analysts say that with the popularization of the pay-per-view TV, the demand for decoding machines will increase sharply.

They say this creates a promising market for some manufacturers and sellers of electronic products, as there are over 200 million TV sets on the mainland. If even only half

of them use the pay-per-view TV system, the production of decoding machines can bring in over 100 million yuan a year.

County in Tibet Last To Receive Communications Lines

*HK1807015992 Beijing ZHONGGUO XINWEN SHE
in Chinese 0937 GMT 17 Jul 92*

[By correspondents Zhu Daian (2612 0108 1344) and Wu Mingjian (0702 2494 1696)]

[Text] Lhasa, 17 Jul (ZHONGGUO XINWEN SHE)—The construction of a post and telecommunications system in Motuo County of Tibet, known as the "isolated isle on the plateau" and China's last county without access to telephone communication, went under way in mid-July. The small-scale satellite communications ground station scheduled to be completed next year will offer long-distance telephone services, so that all counties in China will be linked up by telephone communication.

Situated in the eastern foothills of the Himalayas, Motuo is an outlying county of Tibet's Linzhi Prefecture. Because of the high mountains and deep valleys, there are still no telephones operating within the county town still today, let alone a long-distance telephone system. Furthermore, there is no highway that reaches this county. This is why it has always been called an "isolated isle on the plateau." Now, the Post and Telecommunications Bureau of Linzhi Prefecture of Tibet and Motuo County has decided to invest 1 million yuan in building post and telecommunications facilities for Motuo.

It is learned that ASAT [expansion unknown] satellite communication equipment will be used in Motuo County's post and telecommunications project. The whole of the project will be completed before the end of next year.

Zhejiang, Japanese Televisions Exchange Live Programs

*OW0311141492 Beijing Radio Beijing in Japanese
0930 GMT 30 Oct 92*

[Text] Five Chinese and Japanese television stations, including Television Zhejiang of Zhejiang Province and Television Shizuoka of Japan, have exchanged programs on introductions to their own localities via satellite.

This is the first test case of exchanging live relays of such special programs via satellite conducted between Chinese television stations at the provincial level and Japanese television stations at the prefectural level.

The first special program, entitled Blooming of Friendship and Sino-Japanese Television Culture, was broadcast on 29 October to celebrate the 10th anniversary of the establishment of friendly relations between Zhejiang Province and Shizuoka Prefecture. While reviewing the exchanges promoted during the past 10 years, the special program, which lasted 90 minutes, introduced special products and scenic places in the two localities.

A special karaoke program, named Sino-Japanese Friendship Over the Bridge of Songs, will be relayed live on 1 November.

Shanghai Eastern Radio Station Goes on Air

*OW2910044492 Beijing XINHUA in English 1522 GMT
28 Oct 92*

[Text] Shanghai, October 28 (XINHUA)—China's first talk-back radio show went on the air in Shanghai today.

The Shanghai Eastern Radio Station is broadcasting 24 hours a day and is the city's second radio service.

Listeners can telephone announcers and their conversations are relayed live unrehearsed. Previously China's radio hosts only read scripts prepared by reporters and editors.

Shanghai Eastern Radio is beamed to the Yangtze River Delta and Shanghai, Jiangsu and Zhejiang Provinces.

Jiang Zemin, general secretary of the Chinese Communist Party Central Committee, wrote the name inscriptions for the station.

The new station received congratulations from more than 30 radio and television stations and recording companies in a dozen countries today including the BBC and NHK.

Hainan Economic Radio Begins Broadcasting 30 Oct

*HK0211023092 Beijing ZHONGGUO XINWEN SHE
in Chinese 1216 GMT 30 Oct 92*

[By reporter Mo Chengxiong (5459 2052 7160): "Hainan Economic Radio Officially Goes on the Air"]

[Text] Haikou, 30 October (ZHONGGUO XINWEN SHE)—To greet the great tide of reform and opening up to the outside world, Hainan Economic Radio Station's call signals vibrated and echoed in the sky over the Hainan Special Economic Zone at 0620 this morning.

This morning, this reporter took a taxi to the Overseas Chinese Guest House to cover a story. The taxi's radio was tuned to the Hainan Economic Radio Station's "news program" and the "information program," which immediately followed. The taxi driver told this reporter that he liked to listen to the station's programs, and, moreover, by broadcasting the programs on his radio, he could enable customers travelling south and north to be promptly informed of what was going on at home and abroad and of various economic information. He said that this was also a way to solicit and serve customers. It is being said that the approximately 2,000 taxis in Haikou City all tuned to the station's programs today as if by prior agreement.

It has been learned that the station primarily covers economic issues in the form of direct reporting using anchor men and by combining popular preferences, service, information, entertainment, and education. By bringing its strong points, such as quick broadcasting effectiveness for a given period of time, large broadcasting capacity, and the potential to reach a large audience, into full play, the station will beat the gongs to clear the way for Hainan's economic construction. It plans to air a news

program every hour on the half hour and information at every hour on the hour. Morning programs will primarily be devoted to current political and economic affairs, the afternoon programs will stress social and economic affairs and service, and the evening programs will focus on cultural recreation. The station will broadcast for eleven hours and ten minutes a day, using FM stereo frequencies.

Economists here pointed out: The birth of the Hainan Economic Radio Station is the necessity of Hainan's super economic development. It has been reported that, in the first nine months of this year, Hainan imported \$220 million and 1,030 million yuan in overseas and domestic funds.

Nation's First Fiber-Optic Cable TV Network Operational

*93P60050B Beijing KEJI RIBAO in Chinese
29 Sep 92 p 1*

[Article by Ye Rong [0673 5554]: "First High-Tech Fiber-Optic Cable TV Network Operational in Jiading County"; cf. early report in JPRS-CST-91-024, 23 Dec 91 p 27]

[Summary] The nation's first high-tech fiber-optic cable TV network, in Shanghai Municipality's Jiading County, was recently completed and is now operational. Designed by Shanghai University of Science & Technology and included by the State in its list of 1992 Key Research Projects, this new cable TV network now provides high-quality TV program reception to over 3,000 residential families in two small districts; each evening residents can choose from among eight TV programs. It is understood that this network can simultaneously transmit up to 46 programs, and that the new network has operated well in trials beginning on 1 May of this year.

Formatted-Network CDMA SATCOM Earth Station Operational

*93P60050C Beijing ZHONGGUO DIANZI BAO
in Chinese 5 Oct 92 p 3*

[Article by Liu Zhinwen [0491 5347 2429]: "Formatted-Network Code-Division Satellite Communications Earth Station Enters Functional Stage in China"; cf. early report in JPRS-CST-92-004, 20 Feb 92 p 38]

[Summary] A formatted-network CDMA [code-division multiple access] SATCOM earth station of the type jointly developed and manufactured by Beijing University and the Shanxi Galaxy Electronic Equipment Plant has been installed in one of China's frontier regions and is now operational, indicating that this type of SATCOM earth station has entered a functional stage. This point-to-point dedicated SATCOM network incorporates microcomputer control, permitting any station to freely enter the network for simplex computer data and simplex vocoded telephone communications. This equipment can also be used for economic mail, data searches, intelligence and information transmission, and other types of low-bit-rate data communications.

Intelsat Earth Station Complex Opens Near Beijing

HK2710034592 *Beijing CHINA DAILY*
in English 27 Oct 92 p 3

[Article by staff reporter Xie Liangjun: "State-of-Art Satellite Station Goes on Line"]

[Text] The largest and most sophisticated earth station for satellite communications in Asia opened yesterday in Beijing's Shahe, about 45 kilometers northwest of the Chinese capital.

The station moves China's satellite technology into the world's leading ranks.

The new tracking, telemetry, command and monitoring earth station is one of the six complexes in the International Telecommunications Satellite Organization (Intelsat) system, according to Irving Goldstein, Intelsat's director general and chief executive officer.

He said at the opening ceremony, also attended by Posts and Telecommunications Vice Minister Zhu Gaofeng and Beijing Deputy Mayor Lu Yucheng, that this earth station

is seen as crucial to the operations of the global satellite network. It will provide vital services for Intelsat's other 124 member nations, he said.

"China and Intelsat have a strong and vigorous relationship, and use of Intelsat capacity by China has been growing steadily both internationally and domestically," said Goldstein, adding that his organization is committed to meeting China's increasing telecommunications needs in the future.

Based in Washington D.C. in the United States, Intelsat is an international commercial co-operative which owns and operates a global satellite communications network.

Chinese officials say that the equipment and technology used in the Beijing earth station "are fully advanced, with high level automation and function." Its most critical equipment is imported from the United States and Japan.

The Beijing Telecommunications Administration (BTA) won the bid for the station in 1987, after defeating three competitors from Japan, the Philippines and Indonesia, as well as two domestic competitors.

HONG KONG

THE STANDARD Begins Publishing 'Fax Newspaper'

HK0511032992 Hong Kong THE STANDARD in English 5 Nov 92 p 1

[Text] THE STANDARD made publishing history yesterday when it joined forces with Hutchison AT&T Network Services to produce Hong Kong's first fax newspaper, covering the US election with unrivalled speed and convenience. The response from readers kept our fax machines busy all afternoon—and the verdict was unanimous: It's a hit.

More than 6,000 faxes were sent to a select group that included the cream of Hong Kong's corporate world: hongs [large commercial establishment], hotels, prominent legal firms, advertising agencies, members of the Hong Kong General and the American chambers of commerce, and readers who requested it. The dozens of questionnaire responses showed that, on average, each fax was read by an additional seven people—scoring a remarkable readership of 42,000 influential people in one afternoon.

Keep watching THE HONG KONG STANDARD, the paper that defies the boredom of yesterday for the promise of tomorrow.

INDONESIA

Education TV To Begin Evening Broadcast on 10 Nov

BK0511050292 Jakarta THE JAKARTA POST in English 27 Oct 92 p 2

[Text] Jakarta (JP)—Televisi Pendidikan Indonesia [TPI], the private educational television station, will officially begin evening transmissions on Nov 10.

Only residents of Jakarta, its surrounding areas, and satellite receivers will have access to the evening broadcast, the station's operational director, A.A. Fahmi said in a press conference yesterday.

Although he refused to reveal how much each program transmission will cost, Fahmi said some relaying stations will be constructed in phases to make nationwide transmissions possible in the future.

He said the main station is located on Jl. [Street] Pintu II at Taman Mini Indonesia in Miniature Park, East Jakarta. The facilities includes some master controlling instruments, a 20-kilowatt transmitter, an antenna tower, and other supporting facilities, he added.

According to Fahmi, the transmission will use the Palapa B 2 P satellite transponder. "I cannot tell you the transmitter we use now," he added. "I think this new one is better in quality than the one we are using."

The evening program will begin with signal and visual tests on Oct. 28 and 29. A three-hour program will be broadcast nightly from Nov. 1 to Nov. 3, starting at 6.30 pm.

He said a longer schedule is planned for Nov. 4 to Nov. 6. A four-hour program will be broadcast on the next two days, starting at 5 pm, he said.

Both morning and evening programs consist of various subjects which are 33 percent educational, 32 percent entertaining, 20 percent advertising, 12 percent information, and the rest are supporting programs, he said.

The evening programming will provide more foreign than local products.

With the evening programs, TPI will have 13 hours of broadcasting.

PHILIPPINES

Malaysia, Brunei, Philippines Launch Fiber-Optic Link

HK1910130792 Quezon City ABC-DWET Television in Tagalog 1000 GMT 19 Oct 92

[From the "ABC-DWET News Program"]

[Text] Communication between the Philippines, Malaysia, and Brunei is set to improve following the connection of a fiber-optic submarine cable that will link the three countries using the most modern means of communication. The project was launched this morning during a press conference at the Philippine Plaza. The cable will cost \$67 million and is part of \$320 ASEAN Optical Fiber Cable Network.

TAIWAN

Taipei To Help Build Asian-Pacific Cable Network

OW061112092 Taipei CNA in English 0754 GMT 6 Nov 92

[Text] Taipei, Nov. 6 (CNA)—The Republic of China and 10 other countries in Asia and Pacific will jointly construct an opticfiber cable network in the area, it was announced Thursday.

The network will cover Taiwan, Japan, South Korea, Guam, the Philippines, Brunei, Indonesia, Singapore, Malaysia, Thailand, and Hong Kong, forming a circular network with Taiwan at its center.

International Telecommunication Administration (ITA) said that the network, when completed, will connect Taiwan with major cable networks in the world and help make Taiwan a telecommunication and financial center in Asia.

The 26,000-km network will house more than 60,000 telephone lines.

ITA said that the network is expected to be completed between 1996 to 1998, with a total investment of US\$1.3 billion.

The countries that are involved in the network will hold a meeting next February in Hawaii to discuss the investment plan.

Aeronautic Satellite Communication Services Opened

*OW0112104792 Taipei CNA in English
0816 GMT 1 Dec 92*

[Text] Taipei, Dec. 1 (CNA)—Air-to-ground one-way phone call services will begin on Dec. 1, the Directorate General of Telecommunications (DGOT) of the Ministry of Transportation and Communications said Monday.

The DGOT noted that this kind of service is a first step in its opening of international aeronautic satellite communication services to the public.

Henceforth, the DGOT said, travellers aboard an airline equipped with aeronautic satellite telephones can make registered phone calls to anyone on the ground.

Even before delivery of two new Boeing 747s, Eva Air announced that passengers aboard its new airplanes would be able to make phone calls via the up-to-date satellite link.

Eva's Boeing 747s are scheduled to begin trans-Pacific flight services on Dec. 12.

Additionally, it is understood that the national carrier—China Airlines—has also decided to introduce this advanced service to its passengers once the facilities are installed.

HUNGARY

Revised Telecommunications Concept Described

93WT0028A Budapest *FIGYELO* in Hungarian
15 Oct 92 p 26

[Article by Janos Budai: "Delays in Telecommunications: Ariadne's Line"]

[Text] The increased need for telecommunications in an economy destined to remain competitive in world markets has already been pointed out by Hungarian researchers in the early 1980's. This recognition, however, was not followed by deeds for almost a decade. At 1990 prices, the backwardness of Hungarian telecommunications costs 100 million (!) forints per day in damages even according to conservative estimates. And this figure does not include losses incurred as a result of foreigners being deterred from investing in Hungary due to the lack of telecommunications.

Everybody thought that the political system change would also herald a system change in telecommunications. Based on the original schedule, a new law to take the place of the postal service law should have been adopted in the fall of 1990. Most people thought that legislators would recognize the liberalizing and antimonopolistic endeavors manifested in developed and developing countries, and would, at last, establish conditions by law for the rapid development of telecommunications in Hungary. But this did not quite happen.

New Plan

Although at initial public debates officials repeatedly promised to supplement the official monopolistic concepts that retard development with a liberalized, competitive alternative model, their promise has repeatedly failed to materialize. By no coincidence, a significant number of coalition representatives, particularly those from individual voting districts, was unable to support the official plans, because in 1994 the practical results of their legislative performance could also be judged by their constituencies based on changes in the telephone situation. Thus it came as no surprise that representatives found the government's stubbornly monopolistic legislative proposals to be unfit for general debate. Two years had passed in the meantime, however! The Ministry of Transportation, Telecommunications, and Water Management [KHVM] is clearly responsible for the delay.

In recent weeks a turnaround appeared to be in the offing, at last. The government withdrew its own proposal, and the telecommunications subcommittee of parliament's Economic Committee once again introduced a legislative proposal that rests on essentially new foundations, one that has been agreed upon by the six parties.

We asked representatives involved in this work to tell us about the details of the agreement.

MDF [Hungarian Democratic Forum] representative Kalman Katona, the chairman of the six-party subcommittee, claims that there are essential differences between the present proposal and the earlier proposals. The committee bill would remove conditions providing for the exclusive state ownership of the basic network from both the Law on Concessions and the Civil Code of Laws. Those

who lease the basic network could also become service providers, according to the new plan. Further, the scope of services mandated to be performed in the form of concessionary operations was narrowed, and data transmission was removed from this scope altogether. Public purpose telephone service provisions, public purpose personal calling services, public purpose mobile (radio-telephone) services, and public service radio and telephone services remained within the concessionary structure. As presently proposed, only the public purpose telephone service from among these services would remain a monopoly (the representative has failed to state, however, that this service represents at least 90 percent of the entire Hungarian market).

The representatives succeeded in persuading the Finance Ministry to manage the Telecommunications Fund independent from the state budget.

The new legislative proposal also satisfies demands made by local government interest groups. It states that the minister must not reject requests by at least half the number of settlements in a primary or central network district for the issuance of a competitive tender invitation for concessionary service provisions, if these settlements also assume some financial responsibility regarding the concession. The right to intervene by interest groups and users would be ensured by a provision mandating the minister to establish a telecommunications interest mediation group and a committee that would qualify bids from the engineering standpoint. Just why the adoption of the law should not be preceded by the adoption of a concept concerning telecommunications has previously been the subject of much debate. Since the six parties have managed to reach an agreement regarding the legislative proposal, they also agreed that a telecommunications policy concept would have to be submitted to parliament within 30 days from the date of the adoption of the telecommunications law itself.

Successful Lobbying

Socialist [MSZP—Hungarian Socialist Party] Representative Laszlo Pal is more skeptical than his colleague. He regarded the earlier legislative proposals as having a single message: All power must be retained by the minister. Thanks to the lobbying efforts of local government interest groups, however, some groups of coalition representatives also rejected this idea, and thus the government was unable to count on an automatic approval by coalition representatives. Laszlo Pal agrees with Kalman Katona regarding the positive aspects of the new legislative proposal.

On the other hand, Laszlo Pal continues to find as unacceptable the fact that to this date the government has failed to submit an official telecommunications policy concept to parliament.

In this representative's view, the legislative proposal leaves the question of MATAV Corporation's privatization open, at a time when this matter is already being negotiated. The key question is this: Should foreign capital be attracted to finance the country's telecommunication, or MATAV Corporation? The two are not the same, and in Laszlo Pal's

opinion the former solution would optimize the results. In contrast, the KHVM and the AVU [State Property Agency] recommend MATAV as the investment target.

The present proposal became confused and subject to misinterpretation as a result of the fact that rules pertaining to public service radio and television broadcasting had remained part of the proposal. These rules should preferably have been omitted. Another point of disagreement, insofar as Laszlo Pal is concerned, is the fact that the new proposal would assign the function of allocating frequencies to the chief supervisory authority on telecommunications; much of that function has nothing to do with telecommunications. Laszlo Pal believes that combining the two types of authorities creates only a semblance of advantages. The situation is further complicated by the fact that the telecommunications law could take force only jointly with the frequency and the postal service laws, because only this way could the telecommunications and the frequency laws replace the postal service law. Parliament has adopted the postal service law six months ago, but it was not possible to give effect to the law because of the missing telecommunications and frequency laws. If adopted, the situation will be the same regarding the telecommunications law, because a frequency law has yet to be adopted and requires improvements on several points.

Laszlo Pal believes that a telecommunications model providing for limited competition in every field is needed, thus also in the field of public service long distance telephone services. This could only benefit the country, as shown by practices followed abroad. In any event, however, the new legislative represents progress as compared to previous proposals. But MATAV's unhealthy overweight in Hungarian telecommunications would be reduced only if the KHVM took advantage of provisions contained in the legislative proposal designed to create competition. Otherwise, even the three year plan could be endangered because of MATAV Corporation's deteriorating financial situation, even though the three year plan has also called for a slower pace of development than the pace that would be required in Hungary.

Gaining Power

FIDESZ [Federation of Young Democrats] Representative Lajos Kosa believes that in addition to settling basic conflicts, the new proposal enables Hungarian telecommunications development to attract capital not intended for service provisions. But the law also presents certain dangers. Some private firms could make false, unrealistic promises to prompt local governments left without a choice to organize regional telephone companies.

The FIDESZ representative said that issues related to the frequency law have become far more politicized than the communications law because the frequency law is more closely related to the media law. He claims that due to disputes related to the media, the solution is going to be based on power conditions, rather than on consensus.

POLAND

Status of Polish Telecommunications Outlined

92WS0807I Maidenhead TELEFACTS in English
Aug 92 pp 7-13

[Article by Clare McCarthy of Datapro International: "The PTT Today"]

[Text] Since 1987, telecommunications in Poland has been in a state of transition. Originally, the Polish Post, Telephone and Telegraph (PPTT) was part of the Ministry of Post and Telecommunications. Between 1987 and 1989, telecommunications activities were managed by the Ministry of Transport and Maritime Economy. After the new government was elected, in late 1989, the Ministry of Post and Telecommunications again became the administrative and regulatory body responsible for supervising and co-ordinating the PPTT's domestic and international telecommunications activities.

In the post-1989 European environment, however, monopolies, government control, and heavy state regulation have not only become unpopular, but also scorned as inefficient and unprofitable ways of doing business. Eager to encourage privatization and entrepreneurial initiatives, in early 1990, the Polish government submitted draft legislation to Parliament aimed at amending the existing statutes on telecommunications.

Subsequently, a completely new Posts and Telecommunications Act was submitted on 23 November 1990, and came into force on 16 January 1991; this effectively ended the State monopoly of telecommunications services. Domestic and foreign investment and operation of basic local telephone services and networks in Poland is now permitted, provided the investor/operator has obtained a license from the Ministry of Post and Telecommunications. Foreign investment in long-distance telecommunications links and networks is limited to 49 percent, but foreign investors are not permitted to operate international telecommunications links and connections of any kind.

At the end of 1991, the PPTT's activities were separated from State control and the PPTT formally ceased to exist. On 1 January 1992, postal activities were separated from the telecommunications activities. The largely unprofitable postal operations are now controlled by public service enterprise Poczta Polska, while telecommunications are the domain of the Telekomunikacja Polska—Spolka Akcyjna, or Polish Telecom SA (PTSA).

Telecommunications activities have always been very profitable for the government. In 1990, telecommunications activities generated a profit of Zlotys (Zl) 1,663,000 million on sales of Zl 4,938,000 million (\$1 = Zl 14,000). Source: Polish Telephones Foundation, May 1992). This compares with the postal services sales Zl 1,900,000 million and a loss of Zl 416,000 million in 1990. Postal services have been making a loss for the last 10 years.

The PTS is now a joint stock company which is wholly owned by the State Treasury. Although the government foresees privatization, the structure will not be in place for at least another two years, and sources inside Poland do not envisage privatization within the next five years. A

major privatization of this nature could have dramatic repercussions on the embryonic market economy in Poland. Shares will be floated on the Warsaw Stock exchange and will be available to foreign and domestic applicants. Figure 1 [not reproduced here] demonstrates the planned structure of the PTSA as of May 1992; however, since the dismissal of Minister Wilk, who was developing the organizational structure, nothing has been ratified.

Although the government still guarantees foreign loans, the PTSA is now financially independent. The PTSA does, however, pay 40 percent corporate tax to the government, and all salaries are subject to tax. It is now solely responsible for local and international tariffs with the exception that the Ministry of Posts and Telecommunications has the right to impose maximum tariffs for voice and telex services, as long as they are agreed by the Ministry of Finance. Tariffs for VANS are fixed by the service provider and the user, while the Ministry of Post and Telecommunications is responsible for the control of type approval of equipment connected to the PSTN.

Two new executives of the regulatory bodies were created in 1991. At present, they are both linked to the Ministry, but according to Mr. Jerzy Babski, Director of International Cooperation at the Ministry of Posts and Telecommunications, they will evolve to become independent bodies.

- The Polish Telecommunications Inspectorate (PTI) is the telecommunications watchdog which should evolve as an Oftel-type organization.
- The Polish Radiocommunications Agency (PRA) manages frequency allocation of the radio spectrum.

The Telephone Network

The telephone network is organized into three structured levels:

- Local and Regional
- Intercity
- International

As its first priority, the PTSA concentrates on modernizing international, intercity, and urban connections rather than simply increasing subscriber numbers, because new connections without modernization would further construct existing bottlenecks.

Local and Regional

According to the Ministry of Posts and Telecommunications, in May 1992 there were 22 operational local/regional exchanges, with a further 12 planned to be operational by the end of 1992. The PTSA has implemented a special program to modernize the aged network and equipment in Warsaw. Alcatel SESA of Spain is manufacturing eight new digital transit exchanges, fiber optic transmission equipment, microwave-radio-relay interconnection equipment, and 120,000 network nodes. The 140M bps network, which is due for completion in 1993, should serve 2 million subscribers.

Local digital exchanges for the network will be implemented in two phases:

- In the first phase (1992 to 1993), 200,000 lines will be implemented, about half of which will replace obsolete equipment.
- The second phase, encompassing up to 2 million lines, will be completed by the end of the century, though the investment program is still not definite because of uncertainties over financing.

Intercity

According to Ministry figures, in May 1992 there were 34 intercity exchanges operating in Poland. Another 20 will be implemented by the end of 1992. Plans are now underway, though not yet complete, to install 10 new exchanges before 1995 as part of the nationwide digital backbone network.

International

Until mid 1990, Poland had just 1,160 international lines provided by one locally-made E10 international switch and some smaller crossbar exchanges. Automatic direct dialing from Poland to Europe was available only through this one switch, and waiting times of several hours, or even a day, were required for other destinations.

By the start of 1991, the E10 Warsaw exchange had been replaced with a new international gateway. There are now three international digital exchanges in Poland:

The AT&T 5ESS exchange, located in the capital city Warsaw, has a capacity of 3,500 international lines. In April 1992, it was agreed that the capacity should be increased to 7,000 lines; this should be achieved by the end of August 1992.

A Siemens EWSD exchange is currently under construction. Located in Southern Poland at Katowice, it will have 1,500 international circuits.

An Alcatel CIT E10B exchange is also under construction. It will be located mid-way between Warsaw and Berlin at Poznan. It also has 1,500 international circuits.

The PTSA is therefore confident that by the end of 1992, Poland will have 10,000 international lines.

In September 1990, the Komertel digital-overlay business-telephone network was installed in Warsaw, providing a minimum capacity of 2,000 lines. Direct access is limited to banks, hotels, international businesses, and foreign diplomatic missions. This is due in part to expensive connection rates of \$1,000. However, once connected the subscriber pays the same charge as for using PSTN services. By May 1992, Komertel was handling 72 international lines and was used by 1,655 subscribers. Initially seen as a three year interim measure while the PSTN is being upgraded, Komertel will continue to provide automatic international connections.

In September 1991, the Polish trunk telephone network was predominantly analog, based on:

- Coaxial cable for domestically manufactured 300-, 960-, and 2,700-channel systems;
- 960 and 1800 channel-VHF analog microwave links manufactured by NEC of Japan.

In 1990, the old PPTT connected 171,672 new telephone subscribers, around 37,039 of which were in rural areas. According to the Ministry, in 1991, 270,000 subscribers were connected to the PSTN; the PTSA estimates that another 400,000 will be connected by the end of 1992. There are now over 3 million telephone subscribers throughout Poland; a further 2 million have submitted applications, but at present rates, they will have to wait around 12 years before a line is installed. Telephone

penetration stands at 9.3 per 100 population, way below the European average of 34 per 100 population. Following the changes in the telecommunications sector, the government confidently predicts that in the next ten years the number of subscribers will increase to 12 million, penetration will increase to 25 per 100, and waiting time for a connection will decrease to one year. Table 1 summarizes the key statistics for the telecommunications activities of the former PPTT. Figures are not yet available for the PTSA since its separation from State control.

Table 1. Expansion of Telecommunication Systems

	1989	1990	% Change
Number of Automatic Exchanges Lines	3,147,300	3,350,800	6.5
Number of Telephone Lines (km pairs)	7,187,500	8,673,500	20.6
Telephone Sets (thousands)	3,121	3,298	5.7
Telephone Sets per 100 Inhabitants	13.3	13.7	3
Number of Telephone Subscribers	3,124,400	3,293,000	5.5
Telephones Subscribers per 100 Inhabitants	8.28	8.62	4.1
Telephones Installed	168,000	171,700	2.2
Applications for Installation (thousands)	2,340	2,361	0.9
Number of Telephone Calls (millions)	1,529.6	1,532.7	0.2
Number of International Connections	1,650	1,678	1.7
Automatic Telephone Traffic (%)	91.1	91.27	0.19
Telex Automatic Exchanges Lines	50,672	50,672	0.0
Telex Circuits (PCS)	45,648	50,556	10.8
Number of Telex Subscriber Lines	35,950	38,409	6.8
Fax Machine Subscriber Lines	(Not specified)	5,824	—

According to the Ministry of Posts and Telecommunications, there are around 6,000 exchanges in Poland, of which the majority are still manual. Although over 60 percent of traffic is now switched automatically (around 55 percent in rural areas), the exchanges are invariably analog—step-by-step, Stowger, crossbar, and Pentacosta systems. The existing national network is still underdeveloped and technologically outdated:

- 15% of the exchanges are over 30 years old;
- 20% are between 20 and 30 years old;
- 65% of the exchanges are up to 20 years old.

At the end of 1991, only 7 percent of the total number of exchanges connected to the PSTN were digital. However, under the Telecommunications Act 1990, any new switching or transmission equipment attached to the network must be digital. Plans for the future development of ISDN for Poland is being debated by the PTSA, but until the network is digitalized, these discussions will remain hypothetical.

To promote the modernization of the network, the PTSA is following a Program of Modernization and Development of Telecommunications, 1991-1992, originally drawn up by the PPTT under the guidance of the Ministry. One of the key points states that the Polish telephone network—whether based on optical fiber, microwave, or satellite transmission—must use modern digital exchanges employing CCITT SS#7. Digital transmission equipment must offer a minimum capacity of 140M bps. As a result, by the end of 1991, the following milestones had been achieved:

- An AT&T 5ESS switch with the capacity of 3,500 trunks was installed in Warsaw.
- A 140M, bps submarine fiber-optic cable was installed to connect the Danish island of Bornholm to the Baltic port of Koszalin. Poland now has access to optical connections to Scandinavia, North Western Europe, and on to North America.
- A microwave radio link between Warsaw and Koszalin, via Gdansk, was inaugurated as an extension to

- the link from Denmark. This new link provides access to an additional 3,500 international circuits.
- International exchanges are now being constructed in the regional centers of Katowice and Poznan. Equipment will be supplied by Siemens and Alcatel CIT, respectively.
 - The Intelsat system at the Psary satellite ground station was digitalized.

Towards the end of the program, the PTSA hopes to offer satellite telex and fax services. VSAT services should also be available in Poland by the end of 1993 via Vesatel, a joint venture between Televerket of Sweden and PTT Telecom of the Netherlands.

Poland's telephone network will benefit from regional initiatives aimed at improving the general standard of telecommunications in Eastern Europe (see Figure 2 [not reproduced here]):

- One fiber-optic cable will run from Denmark to Hungary. It will pass through Gdansk, Warsaw, Kielce, Krakow, and Katowice.
- An agreement has also been signed for the construction of TEL (Trans-Europe Line). Initiated by the Deutsche Bundespost Telekom, TEL is a 2,000 km fiber-optic cable that will link Frankfurt-am-Main to Dresden, where it will diverge into two spurs. One spur goes on to Gorlitz, Zgorzelec, Wroclaw, Warsaw, and eventually Moscow, and the other goes on to Prague, Brno, Bratislava, and Budapest. The link should be operational in 1993.

The network has many transmission bottlenecks, especially in Warsaw. Surprisingly, unlike many capital cities, Warsaw does not enjoy the most efficient network in the country; around 60 percent of the equipment should be replaced because of breakdowns by the existing switches and the poor quality of the cable. Warsaw is only now approaching the national average of 7 percent network digitalization, while in the Poznan province between 60 percent to 70 percent of the network is digital. (The reason given by Polish sources is that Alcatel digital switches are produced under license in Poznan.) The first digital exchange in Warsaw, with an initial capacity of 3,500 lines, only came into operation in late 1990.

Equipment Manufacturers

The modernization and development of the Polish network is dependent on the introduction of digital switches and transmission equipment. Although a number of switches are made locally, many foreign-made switches are currently marketed and sold through joint ventures established in Poland. Some of these intend to begin manufacturing in the near future.

Western European companies have been quick off the mark, with France Telecom, Alcatel, and Siemens investing heavily in their "back yard." North American companies have also been quick to capitalize on Polish eagerness to import their technology since the relaxing of COCOM restrictions.

- Alcatel CIT Polska is a joint stock company between Alcatel CIT (France) and Poznan switch manufacturer Teletra. The company already manufactures Alcatel's Pentacosta switches under license, and hopes to produce over 250,000 lines of E10/OCB 283 digital exchanges per year in the near future. Alcatel CIT has signed an agreement with the government to provide 314,000 network nodes of the E10B system. It will also install exchanges in Poznan, Legnica, and Czestochowa.
- SETEL is another joint stock company involving Alcatel. Alcatel SESA (Standard Electrica SA) of Spain and PZT (National Transmission Plant) of Warsaw will manufacture and distribute System 12 exchanges. Alcatel SESA is also manufacturing eight new transit exchanges and 12,000 network nodes for Warsaw.
- CEWIS is a joint stock company comprising Warsaw-based PXB manufacturer ZWUT (Telephone Equipment Production Plant), and Siemens AG. CEWIS will produce Siemens' EWSD switches and transmission equipment. It will provide 170,000 network nodes for the exchange under construction in Katowice, and in the Goclaw district of Warsaw it will introduce a pilot exchange. ZWUT also has supply agreements with Italtel and Samsung.
- TS-ZWUT, a joint venture between ZWUT and U.S. investors Arnica, has been established to manufacture and sell PBXs designed by Cortelco/ITT.
- Italtel plans to modernize the whole Przemysel province. However, plans to manufacture PBXs for 100, 200, 400, and 800 lines with Telmont of Warsaw have failed.
- Samsung of Korea has already begun modernizing the Opole province and has been commissioned to supply 29 telephone exchanges and 113,000 subscriber connections.
- Telrad of Israel is working with Era to manufacture PBXs.
- Northern Telecom Elwro is a joint venture between Northern Telecom U.K. and Wroclaw-based information technology company Elwro. Announced in February 1992, the new company will manufacture key systems and DSM-10 central office switches, and up to 50,000 lines in a year. Northern Telecom is already undertaking a ZI 125,000 million upgrade of Elwro's facilities. Kapsch, Northern Telecom's Austrian licensee, is also collaborating with Elwro to produce ADS-100 exchanges.

AT&T has also a presence in Poland. At the beginning of 1991, AT&T Network Systems International (AT&T-NSI), based in the Netherlands, won a contract to supply 5ESS digital switching systems for the provincial capitals of Szczecin, Polck, Siedlce, and Wloclawek. AT&T-NSI will also provide transmission equipment including digital host exchanges, intercity exchanges, subscriber lines, remote switching modules, fiber-optic transmission equipment, and digital radio links between Szczecin and Kozalin.

AT&T-NSI has already installed an international digital gateway switching system, and plans for an international radio link have been mooted. One of AT&T-NSI's greatest

successes in Poland to date has been the switch it has supplied for the Komertel overlay business telephone network. In April 1992, AT&T announced that it would be introducing an ISDN overlay to Komertel, which would offer primary service by the end of May 1992. Sources inside Poland are, however, skeptical that the company will be able to achieve this target so rapidly.

Mobile Communications

Mobile communications have been in existence in Poland for the last 25 years, although in the civil sector, these have been limited to dispatcher networks and emergency services. In the last four years, mobile radio subscribers have had access to a manual/semi automatic public mobile radio network operating at 160MHz and covering the cities of Warsaw, Katowice, Lodz, and Gdansk-Gdynia. It has the capacity for up to 10,000 subscribers, but at the end of 1991, there were only just over 1,000 subscribers.

In April 1991, the former PPTT began to receive bids to build and operate the first Polish cellular mobile radio network. No formal tender was announced, but by June 1991, the PPTT had received some 25 bids and decided to award the contract to a partnership between France Telecom (24.5 percent) and U.S. RBOC Ameritech (24.5 percent). Under the new Telecommunications Act of 1990, the group is entitled to hold 49 percent of the joint venture company, with the PTSA retaining the controlling 51 percent share. The consortium, called Polish Cellular Telephones, will use Nokia switches to build and operate an NMT 450MHz network for Warsaw and later for national coverage. Polish Cellular Telephones estimates that in five years the network will have 50,000 subscribers.

Like most eastern European countries, Poland does not yet have the technology or capital available to invest in GSM. Moreover, the 900MHz frequency used by GSM has not yet been freed by the Soviet military for civilian use. Poland is nevertheless wisely laying a solid foundation of analog cellular mobile communications, and allowing the more affluent western European countries to deal with the expensive teething problems associated with GSM, before it draws up its own GSM schedule.

Satellite Communications

The PTSA has a satellite station located at Psary. At the end of 1991, it was using three systems:

- Inmarsat—used for communications with ships via satellites fixed over the Atlantic and Indian Oceans.
- Intelsat—provides direct digital connections from Poland to the U.S. (100 digital channels), Canada (90 digital channels), Australia (transition to digital in the Indian Ocean region), Israel (FDM/FM system), Singapore, Japan, Saudi Arabia, and the United Arab Emirates. This system at Psary is being upgraded to extend the direct links with China, Taiwan, and India.
- Intersputnik—used for telephone and TV transmission within the former Eastern Bloc; it requires modernization. A Soviet satellite above the Atlantic is used for communication with East Africa and North, Central, and South America.

Poland has been a member of Eutelsat since November 1990, and a Eutelsat system should be installed at Psary by 1995.

Paging

In March 1991, the old PPTT opened Poland's first radio paging facilities. Based on the existing VHF FM national radio network in the 66-73MHz band, the PTSA hopes to offer total national coverage by the end of 1992, and to have 100,000 subscribers by the end of 1993. Paging receivers are manufactured by Nokia and currently imported from Finland. There are plans to manufacture the receivers locally.

Polpager, a private company offering nationwide paging, has failed to make a significant impact on the Polish market, due to the lack of promotion and possibly high pricing.

Data Communications

Polish data-transmission facilities operate at rates of 2.4K bps and 4.8K bps for leased-line connections. International leased-line transmission is available at up to 64K bps. By the end of 1991, there were approximately 900 leased data lines in Poland.

Since February 1991, the PTSA has been operating packet-switched public data network called POLPAK. Modelled on France Telecom's Transpac X.25 network, the network uses Alcatel CIT switches. It has 18 nodes, a total capacity of 1,300 terminals, and 1,200 ports for applications such as electronic mail and EDI. Available in Warsaw, Katowice, Krakow, Poznan, Wroclaw, Gdansk, Szczecin, and Lublin, access is via X.25 terminals, from modems connected to the PSTN, and from the telex network.

Some of this equipment is used by the Polish National Bank's private Telebank 2M bps data transmission network. It connects the bank's main branches, and will be extended to include other banks by 1995.

Text Services

The Polish telex network is fully automatic, with equipment supplied by local manufacturers. Exchanges are digital and fully electronic. They are also fitted with stored program control. At the end of 1991, the telex network had a total capacity of 47,000 lines and approximately 38,500 subscribers, with another 2,000 on a waiting list. Growth in telex traffic is expected to continue for about two years, until digitalization of the network will allow fax communications to replace telex as the more popular medium.

Since July 1990, a national Minitelex service has been available. Minitelex consists of a transportable unit which can send messages via the telephone network to electronic mailboxes at Minitelex exchanges in Gdansk or Warsaw. Messages can be checked by phone at intervals and collected electronically, or sent to the telex network. A national teletex service also exists in Poland, which is based on the UK Oracle standard.

In 1990, there were 5,824 fax machines in Poland; this figure has been increasing rapidly, due to the fact that permission is no longer required to connect fax machines

to the network. The user must merely inform the PTSA that the machine is being connected. If, however, the user then intends to offer fax services, a license must be obtained from the Ministry of Posts and Telecommunications. In 1992, there were 40 approved fax types, with the most important criteria being error-correction capabilities. Fax machines are invariably of foreign make, with Panasonic being the most popular one.

Value-Added Network Services

Value-Added Network Services (VANS) have emerged in Poland only since the abolition of COCOM restrictions.

Electronic mail is provided over POLPAK by two Polish companies, the PTSA and the privately-owned TESA. The PTSA has 5,000 subscribers to its telex and teletex electronic mail service known as POLKOM. TESA Communications has based its service on the Geomail system operating in Germany; it will provide an international fax gateway to 10 countries. TESA will work in conjunction with POLPRO, the national body which will promote the Edifact standard for EDI.

The Future

The PTSA has already set itself some ambitious targets for the year 2000. Although Poland aims to achieve in 20 years what most western European countries achieved in 40 years, it has the advantage of being able to learn from past mistakes and thus save valuable time, money, and resources.

By the year 2000, the PTSA expects:

- The number of subscribers to increase to 12 million;
- Line density to increase to 25 per 100 population;
- Waiting time for a connection to decrease to one year by 1995, and just two weeks by the year 2000.

The PTSA also plans to have 100,000 terminals connected to switched data network and/or ISDN islands; the latter will be available in business and regional administrative centers.

To capitalize on the equipment and expertise available, Poland must continue to attract foreign investment and encourage its own entrepreneurs through such devices as government grants and "tax holidays" (waiving of tax during the crucial early years of development of a new company). However, as with much of Eastern Europe, it needs a reasonably efficient telecommunications infrastructure before it can stimulate interest and investment.

Poland has benefited from large communities of Polish emigrants abroad (especially in the U.S., Canada, UK, and Australia), who are lobbying for investment and development in their homeland. For example, Ameritech, now a member of the cellular mobile network consortium, is based in Chicago, which has a high proportion of Polish immigrants. Ameritech apparently plans to help Chicago Poles buy and send cellular phones to relatives in Poland. This will go some way to achieving the PTSA's target of 100,000 subscribers by 2000 and increase telephone penetration in Poland.

Beyond the PTSA, Poland is taking its future very seriously. Within Europe, Poland has proposed establishing a free-trade zone with CSFR and Hungary, preceding EC memberships. The country is also emerging as a regional adviser for the new Baltic and Balkan States, and it is developing as an East-West trade center. Poland has already established links with the former Soviet territories, and Polish business executives—with their knowledge of the market, and the ability of the majority of them to speak Russian, English, and French—will have a headstart building contacts in the East.

Nevertheless, Poland still faces an uphill struggle in modernizing its telecommunications sector, developing its market economy, attracting foreign investment, and installing all the governmental, legal, and corporate structures required to support the telecommunications infrastructure into the next century.

FRENCH GUIANA**Further on Ariane Deployment of Japanese Satellite**

*OW0212021592 Tokyo KYODO in English
0040 GMT 2 Dec 92*

[Text] Kourou, French Guiana, Dec. 1 KYODO—An Ariane rocket blasted off Tuesday [1 December] carrying a communications satellite for Japan's Space Communications Corp. (SCC), sending it successfully into orbit. The new Superbird-A satellite was placed in a geostationary

orbit by the rocket of Western Europe's Arianespace some 20 minutes after blast-off and is slated to begin operations next February.

The satellite will provide telecommunications service for Japan's domestic market, replacing a Superbird-A satellite that was launched in 1989 but went out of operation in 1990. The new satellite will be the second operating satellite for SCC, following the new Superbird-B satellite that was successfully launched, also by an Ariane rocket, in February this year.

SCC, owned by Mitsubishi Corp. and some other Mitsubishi Group companies, is one of Japan's three satellite communications companies.

INDIA

Telegraph Act Reviewed, Report Submitted

93WT0026A Madras *THE HINDU* in English
10 Oct 92 p 9

[Unattributed article: "Panel Wants Telegraph Act Repealed"]

[Text] New Delhi, Oct. 9—A 12-member Committee, set up to review the Indian Telegraph Act 1885, in its report to the Minister of State for Communications, Mr. Rajesh Pilot has called for repealing the century old legislation and replace it by "Indian Telecommunications Act." Besides, it also recommended that the Act's focus should shift from being "power oriented" to "subscriber oriented" to reflect the current trend of deregulation.

The 150-page report noted that the representatives of subscribers deposing before the committee demanded that there should be a radical change in the Act particularly in the role of the government. "They felt that the Government has so far failed to provide telecom services in variety, quantity and quality" and suggested that it should give up its exclusive right to establish and operate telecom services and confine itself to licensing, standardising and regulating. "They also felt that competition and purposeful regulation would bring about a change for the better."

A majority of the committee members considered the consumers' suggestions "but did not agree with the suggestion" implying a continuation of Governmental stranglehold over telecom services. The Chairman of the Committee, Mr. D.N. Nanda, a former member of the Telecom Commission in his letter to the Communications Minister stated "However, I would request that this (consumer) alternative may also be considered. In my opinion a drastic step of this type is necessary at this stage to remedy the situation, lest it is too late and the coming generation accuse us of resorting to soft options damaging the interest of telecom services," he said.

The committee has made an effort to change the tone of the act to make it service oriented by incorporating in it the objectives of the Act, duties and responsibilities of service providers and method of redressing complaints and grievances. However, there was an undercurrent in the committee that these provisions may be considered discriminatory by the courts. Accordingly, Mr. Nanda in his letter (appended to the report) to the Minister requested that "these provisions may not at least be toned down if not improved."

The committee chairman wrote "I am sure there won't be any problem in getting the proposed Act passed by the Parliament. Your name will be written in golden letters in the history of telecommunications for your courage and foresight, in ordering the review of the hundred year old Act."

Interception of calls: But he, however, felt that Section 5 of the existing Act dealing with interception of telephone calls may pose a problem in Parliament. In this context, he said he would like to bring to Mr. Pilot's notice the following concerns: (i) Under this section the Central Government and the State governments are empowered to intercept telecommunications in the interest of national

security. The DOT's role is restricted to extending the required lines to the agencies who are duly empowered to exercise this power by the respective governments.

Mr. Nanda said that in his opinion as this section mainly pertained to the national security and had nothing to do with the management of telecommunications, it should form part of an Act dealing with national security and not the Indian Telegraph Act. He suggested "Perhaps discussion at your level for removing this section from ITA, may be helpful in removing this burden of carrying somebody else's cross on your shoulders." Mr. Nanda said the committee examined Section 5 from all angles and found that there were enough safeguards already inbuilt to prevent its unbridled use.

However, in the actual section-wise comparison of the 1885 Act and the proposed new legislation as detailed in the report, Section 5 relating to interception has been retained. In a sense the committee has passed the buck to the Communications Minister for reasons stated by Mr. Nanda in his letter to Mr. Pilot.

Call for review of old Act: The committee constituted on November 4, 1991 was originally scheduled to submit its report in May 1992. In view of the far-reaching changes that had taken place in technology the committee called for a comprehensive review of the old Act to make it a "forward looking piece of legislation." The report wanted the Minister to set up a "Telecom Operating Authority" outside the Ministry of Communications to establish, maintain and operate telecom services provided by the Government.

Alongside, it called for constituting an independent "Telecom Regulatory Authority" for monitoring and regulating the services provided by the Telecom Operating Authority and the licensed service providers. The regulatory authority will be responsible for laying down procedures for settling disputes between subscribers, the licensing authority and the service providers.

Telecom 'Giants' Compete for Indian Market

93WT0009A Madras *THE HINDU* in English
19 Sep 92 p 11

[Text] New Delhi, 18 September—Notwithstanding the criticism that the liberalisation process has slowed down, some of the global giants at least in the telecom sector are keen on doing business in India. This was evident from the hectic lobbying by telecom giants like Bell South Canada, Siemens AG of Germany, Singapore Telecom and GPT of UK.

Mr. Hermann Franz, Board Member of Siemens, and Mr. Edward Leigh, British Under Secretary of State in the Department of Trade and Industry, separately called on the Communications Minister, Mr. Rajesh Pilot. They reportedly discussed the possibility of setting up telecom switching units in India in respect of a tender floated by the Department of Telecommunication by (DOT) early this year for supplying two lakh lines of digital direct exchange lines.

However, the Canadian representative is here to assess the possibility of getting into the cellular mobile phone business. Last week representatives of France Telecom and

Singapore Telecom were also here on a similar "survey mission." If the reform process had slowed down why should big players still be interested, observers asked.

Siemens successfully participated in the tender for setting up telecom switching units and received a counter offer from DOT to supply 110,000 lines of digital switching system valued at Rs. 55 crores. But, GPT having failed to be shortlisted by DOT, its offer with a massive grant (reportedly Rs. 400 crores) from the British Government. The GPT chief, Lord Prior, visited India in July to pursue this offer. Interestingly Siemens holds 40 per cent of GPT's equity.

Optimism

Both Mr. Edward Leigh and Mr. Hermann Franz were optimistic about business development in India. Mr. Franz said, "You can feel, hear and see what is going on in Indian factories and also from discussions with officials." There was a complete change and everywhere the spirit of liberalisation and globalisation had caught the imagination of the people. The visiting British Minister said, "during my visit I have spoken to many and none either in private or in public felt liberalisation process would stop."

For India's future liberalisation, creation of a strong infrastructure base such as communication, transport and power was necessary and "here Siemens is ready to participate," Mr. Hermann Franz said. Asked if he could give an estimate of Siemens' proposed investment, Mr. Franz said, "We don't believe in making promises and not keeping them like a few others have done in the past."

For the time being Siemens was seriously pursuing its plans for setting up and supplying switching and other telecom equipment to DOT. "We are expecting an order from DOT shortly," he said.

As for cellular mobile systems, Siemens was in close touch with the short-listed bidders and expected a breakthrough in the supply of equipment to them, Mr. Franz said.

Asked if India could be made a base for supplying telecom equipment to other countries, he replied in the negative. As most countries wanted to have their own switching production facilities there was no scope for selling such hardware outside India. Export prospects lay only in systems engineering or software, he said.

Siemens India and Siemens Nixdorf, Germany, had formed a new company "Siemens Information Systems Limited" in Bombay to explore both the domestic and the global market for software. As regards the possibility of participating in BHEL's equity, Mr. Franz said Siemens would be interested.

Siemens AG was working on a new switch, and by virtue of holding 51 per cent equity in Siemens India the new switch could be transferred to India, he said. It was not known where this would leave GPT which had offered its own switch backed by an attractive grant offer in response to the DOT tender.

British Firms Showing Interest

According to Mr. Edward Leigh, a number of British companies were interested in doing business in India and

they included Shell U.K., and major telecom companies such as GPT, Cable and Wireless and Photophone. Incidentally, both GPT and Cable and Wireless did not figure in the DOT's preferred list for direct exchange lines and cellular phones.

The only offer from Britain was from Cadbury which proposed to increase equity in its Indian subsidiary to 51 per cent. The equity hike might involve 5 million pounds sterling, mostly through a rights issue.

The Singapore Telecom representative asked the DOT to make its cellular shortlisting more transparent particularly on the issue of rentals. France Telecom had merely conducted a silent survey of the cellular telecom scene.

Bigger Private Role in Telecom Sector Urged

*93WT0012A Madras THE HINDU in English
22 Sep 92 p 6*

[Text] New Delhi—The Confederation of Indian Industry (CII) has suggested a seven point initiative including an active role by stake holders to make liberalisation of the Indian telecom sector more meaningful. At the same time, the CII also believed that the Department of Telecommunications (DoT) as an apex telecom body should continue to coordinate the core network and manage national and international communications.

The CII has called for enhanced access in the telecom sector in both urban and rural areas. The confederation believed that the magnitude and complexity of the task was enormous for DoT to take it up alone. The need was for joint sector participation or privatisation.

The CII's seven points are:

- (i) restructuring/reorganisation of the telecom set-up in the country and separation of operating bodies from regulating, licensing and standards setting bodies.
- (ii) Smaller self-sustaining and autonomous bodies in joint/private sector operating in a competitive environment should handle telecom services and maintenance.
- (iii) Building up of higher performance and reliability by inducting state of the art technologies both for hardware and software.
- (iv) Total digitalisation in switching and processing, high speed data communications and networking.
- (v) Harnessing to the maximum expertise and capability available within the country and induction of high technology from abroad for generation of opportunities.
- (vi) Choice of technology based on end application and customer needs.
- (vii) Support to private investment and foreign direct investment in the high end telecom services like value added telecom services and its expansion and integration with the domestic telephone network.

According to the CII, in the past few years the Indian telecom sector had made significant growth both in terms of line capacity and introduction of a variety of services. DoT first introduced competition in the manufacturing sector. Value added services in metros and select cities was second part of the privatisation plan introduced this year.

The CII fully supported the DoT initiative. However, a lot more remained to be done to upgrade the quality of Indian telecom services.

The CII's national committee on telecommunications has decided to spearhead a movement for modernisation and expansion of the Indian telecom set-up in association with organisations and professionals in the field. Thrust areas have been identified and expert groups formed. These groups will come out with concrete strategies for action in a few months. To highlight some of these issues, the CII is organising a workshop on "Implementation of Value Added Telecommunication Services" and a seminar on "Rural Connectivity through Telecommunication" on 25 September and 17 December respectively.

Minister Details Plans for Cellular Phones

93WT0010A Madras *THE HINDU* in English
20 Sep 92 p 4

[Text] Calcutta, 19 September—The Union Minister of State for Communications, Mr. Rajesh Pilot, said here today that by March next year cellular phones would be introduced in the country. These phones would first begin working in the four metropolitan cities and would later be extended to other centres.

Addressing a press meet, Mr. Pilot said the tenders for such telephones were being finalised and added that the Government was taking care to ensure that such phones did not become a burden on the subscriber.

Mr. Pilot said the services would be operated by Indian companies, in collaboration with a foreign firm. Two firms would be allowed to operate in each city which was expected to introduce competition and ensure better services.

The Minister said radio phones, audio conferences, paging and switching equipment would be privatised. The Eighth Plan allocation for communications was Rs. 40,000 crores and allowing private firms to operate would help the department raise some much needed revenue.

The Government's target was to provide telephone facilities for every panchayat in the country by 1995. The aim was also to provide every village with subscriber truck dialling (STD) facilities. In West Bengal about 50 per cent of the total 3,448 panchayats had been covered, Mr. Pilot added.

Nearly 2.5 million people were awaiting telephone connections in the country. In Calcutta the waiting list now was about 65,000. Mr. Pilot said there were some problems regarding STD connections in the State and added that he met the Chief Minister, Mr. Jyoti Basu, and had promised to look into the matter.

Firms for Cellular Phone Service Chosen

93WT0025A Madras *THE HINDU* in English
13 Oct 92 p 9

[Unattributed article: "Eight Firms To Operate Cellular Phone Service"]

[Text] New Delhi, Oct. 12—The Department of Telecommunications (DOT) announced here today names of eight

Indian companies granted franchise to operate the multi-million dollar cellular mobile telephone service in the four metros of Delhi, Bombay, Calcutta and Madras.

Each company has tied up with a foreign partner who will bring in foreign equity to run the services under a licensing agreement to be entered into with the DOT.

The nearly 10 month suspense over the choice of cellular phone operators ended this afternoon when the Minister of State for Communications, Mr. Rajesh Pilot informed the successful companies about the DOT decision.

The Indian companies and their foreign partners (in brackets) in the metros are as follows: Bombay—Bharati Cellular Ltd., New Delhi, (General Mobile UK/SFR, France) and BPL Systems and Projects Ltd., Bangalore (France Telecom); Delhi—Indian Telecom Private Ltd., New Delhi, (OTC Australia) and Tata Cellular Ltd., Bombay, (BCE Canada); Calcutta—Usha Martin Telecom Ltd., New Delhi, (Telecom Malaysia) and Mobile Telecom Services Ltd., New Delhi (Voda Fone U.K.); Madras—Sterling Cellular Ltd., Madras (Cellular Communication International), U.S. and Skycell Communication Pvt. Ltd., New Delhi (Bell South U.S.).

While the services would begin within a year of concluding the licensing agreement with the DOT, the decision to give the job to eight parties was as per the decision taken by the Communications Minister. Mr. Pilot had instructed that it would be better if the DOT licensed eight parties as this would entail eight channels of foreign equity inflow as against lesser equity had the number of franchisees been smaller, sources said.

Yet another reason for giving it to eight parties was to ensure against monopoly in the cellular service, the first mainline telecom service to be under private operation in the country after the Indian Telegraph Act came into effect a century ago.

As far as the DOT was concerned, the new franchise agreement would not entail any outflow of foreign exchange and in any case foreign exchange neutrality would be guaranteed.

STAR Television Plans Digital Telecasts

93WT0011A Madras *THE HINDU* in English
21 Sep 92 p 11

[Text] Bombay, 20 September—Heralding the "Invasion from the Sky," the media czars of satellite television have gathered in Bombay to woo Indian advertisers. Under the auspices of the Advertising Club of Bombay, representatives of STAR TV, Zee TV (its soon-to-be-launched Hindi channel), CNN and Asia Television Network (ATN) set out the many advantages to Indian companies of advertising on these networks.

The future, according to Mr. Richard Gocher of STAR TV, belonged to digital TV. This would allow hours of programming to be stored on a single compact disc. "We are in the stage of a technological fast forward," he said. One CD could store 750 hours of TV programming and through this system a single satellite transponder would be able to telecast on 10 channels. STAR TV was planning to move into digital transmission shortly as it felt it was more

precise, more easily communicated, and allowed for compression of programming and more channels.

An increase in the number of channels would also lower costs for networks. The next step, he predicted, would be pay per view or dial a movie. In other words, individual viewers could satisfy their particular needs both in terms of the timing of programmes they wanted to view and the type of programme they wanted to see.

Recording the dramatic growth of STAR TV viewership in India in the last year to 1.3 million households, a rate of growth of 211 per cent, Mr. Gocher held that STAR TV had redefined television for millions of Indian viewers.

On 1 October, the Hindi affiliate of STAR TV, Zee TV will be launched. According to its chief executive, Mr. Digvijay Singh, this channel was aiming to reach not just Hindi and Urdu speakers on the subcontinent but hoped to become the number one channel for NRI viewers.

Television Regional Service Via Satellite

*93WT0013A Madras THE HINDU in English
25 Sep 92 p 1*

[Text] New Delhi, 24 September—Doordarshan has multiplied the number of options open to viewers by telecasting its regional services—from the five States of Maharashtra, Tamil Nadu, Karnataka, Andhra Pradesh and Orissa in the first phase—via Indian satellites INSAT IIA and INSAT ID. The regional services from these five States can now be received throughout the country with the help of dish antennae systems. West Bengal is also being linked through INSAT ID.

The linking with the satellites was completed last month and tests have already been carried out. Madras, Bangalore and Bombay regional kendra programmes are being telecast through C-band transponders of INSAT IIA, while Hyderabad and Cuttack kendras have been connected through an S-band transponder of INSAT ID.

Cable TV operators will simply have to upgrade their system to give their clients all these five regional programmes, besides the two regular Doordarshan channels. But will they?

Officials in Doordarshan are confident that there will be demand for the regional services in pockets of metropolitan cities in which there is a concentration of people from a particular region. There would be enough pressure from the people to force cable operators to give their clients the regional services.

"In the Chittaranjan Park area in Delhi, for example, where a large number of Bengali families live, we are sure cable TV operators will be forced to give the Bengali regional channel," said one official.

"Similarly, in the Matunga area of Bombay, a large number of Tamil speaking families live. They can demand the Tamil service from their cable operators."

Regulation coming: The Ministry of Information and Broadcasting plans to link all the major regional services to

the satellites. This is expected to go a long way towards solving one of the major problems of the national channel, the need to cater to people speaking different languages and coming from different parts of the country.

The linking of the regional centres via the satellite will mean that a Bengali speaking family in Tamil Nadu, Delhi or Maharashtra will be able to view the Bengali regional programmes, while a Tamil speaking family will also be able to see the Tamil programmes from the Madras kendra no matter where they are.

Initially, cable operators may resist offering the regional services. But the Government soon hopes to regulate the cable operations through a licence fee and is expected to insist that they give both the national and metro channels of Doordarshan as well as one or two regional channels.

With this new facility, there will be less pressure on Doordarshan to telecast regional language programmes or regional films on the national channel. The widening of the horizon for the regional kendras could also mean larger revenues from advertisement, easier sponsorship for programmes, as viewership grows over the years.

Delhi Firm Sets Up Satellite Service

*93WT0027A Madras THE HINDU in English
5 Oct 92 p 13*

[Unattributed article: "Satellite Services From TCIL"]

[Excerpt] New Delhi, Oct 4—The Telecommunications consultants India Limited (TCIL) has set up a separate satellite and broadcasting division to render terrestrial and satellite services in India and abroad.

Addressing a news conference here, the Chairman and Managing Director of TCIL, Mr. Y. L. Agarwal said while the satellite division had already bagged a Rs. 3.50 crore contract for the satellite link-up between central and south India for a public sector unit, the broadcasting division hoped to get business relating to all spheres of broadcasting particularly turnkey projects in the new field of multi-channel microwave distribution systems (MMDS).

Mr. Agarwal said a number of orders had been received by the company for installing micro earth stations and a few of them, were successfully executed. Considering the growing demand for long distance public telephones (LDPT) in rural areas, he said TCIL had opened a new LDPT division and procured a number of projects in U.P., Bihar, West Bengal, Maharashtra and north east telecom circles valued at Rs. 50 crores. TCIL has been actively associated with the Department of Telecommunication (DOT) in the latter's effort to provide telephone to every panchayat by 1995.

TCIL, during 1991-92, concluded a joint venture agreement with the U.S. based company Vanguard Cellular Incorporated on a 50:50 equity ownership to operate cellular and radio paging services in India and abroad. The TCIL-Vanguard venture is one of the 14 companies short-listed by the DOT for its cellular mobile phone services tender. [passage omitted]

Indigenous Digital Switching System Developed

93WT0024A Madras *THE HINDU* in English
14 Oct 92 p 12

[Unattributed article: "Compact Digital Switching System From ITI"]

[Text] Bangalore, Oct. 13—The Indian Telephone Industries Limited (ITI) plans to introduce a new digital switching system into the network in 1993.

The exchange, "XD-90", designed entirely inhouse by the ITI's Switching R&D, is now undergoing field evaluation at Athingal, between Quilon and Thiruvananthapuram in Kerala. Commencement of field trials may take some more time, it is learnt.

According to ITI sources, the hardware for the product was ready even in 1991. But the software quality assurance is still to be completed. Work on the software front is said to be hampered by the non-availability of adequate and trained software personnel.

The switch has a capacity of 16,000 subscriber lines in local exchange and 4,096 trunks in pure transit or trunk exchange. According to ITI sources, microprocessors, memory chips and application specific integrated circuits (ASICS). Incidentally, the chip used, the 512 x 512 chip, is also a product of ITI design. "The extensive use of VLSI technology makes the system compact and reliable with low power consumption," said an ITI executive.

"Countrywide telecom plan would become easier" with the induction of this switch in the network, the spokesman said. The switch, based on a modular architecture, is far more compact than the E-10 B switch which ITI manufactures. For instance, a 10,000 line capacity E-10 B switch requires 100 different types of cards, whereas the XD-90 switch of the same capacity needs less than 25 types of cards. The XD-90 has also effectively surmounted the problem of busy hour call availability (BHCA), the spokesman said.

According to the ITI spokesman, the XD-90 serves the entire range of central offices from local exchange to a large transit gateway switch and adapts to every type of requirement, from the dense urban, to the sparsely populated areas. Some of the special features include a remote line unit which reduces the cabling and administrative costs, and ISDN capability.

A larger version of this switch, the 100,000 port XD-90L is also on the anvil.

LEBANON

Radio Free Lebanon Broadcasts on New Medium-Wave Frequency

NC1009174392 (Clandestine) Radio Free Lebanon in Arabic 1602 GMT 10 Sep 92

[Text] Radio Free Lebanon, operating and heard with fair reception on FM frequency 102.8 MHz, carried the following announcement at 1602 GMT on 10 September: "Radio Free Lebanon Broadcasting Service began today experimental low-power transmission on the new AM (medium-wave) frequency 1215 kHz instead of 954 kHz. Within the coming hours, work will continue to amplify the transmission. We draw the listeners' attention to the fact that Radio Free Lebanon also transmits on FM frequency 102.8 MHz."

The station was heard with poor to very poor reception on 1215 kHz during its newscasts at 0445 GMT and 1045 GMT on 10 September and at other times during the day. The radio was not heard on this frequency on 9 September. Reception checks will continue.

New Frequency Officially Launched

NC1609155592

[Editorial Report] (Clandestine) Radio Free Lebanon in Arabic at 1108 GMT on 16 September 1992 makes the following announcement:

"We would like to inform our listeners that Radio Free Lebanon today began official and stable transmission on the new frequency 1215 kHz, after the conclusion of the experimental period. The radio will continue to strengthen transmission over the next two weeks."

"We would like to remind our listeners that Radio Free Lebanon is also transmitting regularly on the very short wave FM 102.8 MHz."

Regular bureau checks on the radio have so far shown that reception on the new mediumwave 1215 kHz [1217.80 kHz] is often fair but occasionally deteriorates to unmonitored.

Armenian, Karabakh TV, Radio Unite
NC3110155792 Yerevan SNARK in English
1005 GMT 31 Oct 92

[Text] Stepanakert, October 31, (SNARK)—Armenian and Karabakh TV and Radio State Committees join into one body. Slavic Stepanyan, the deputy head of the Joint TV and Radio Centre, said to SNARK's reporter the above event enables to accelerate the restoration of the Stepanakert TV studio, improve the state of its equipment, increase the staff's salaries. Stepanyan considers that the positive changes will enhance the Karabakh journalists activity who are working in the war conditions. The population of Karabakh and Armenia will follow the same TV and radio programs.

Kurdish 'Voice of Lachin' Begins Broadcasting
OW0211215492 Moscow INTERFAX in English
1712 GMT 2 Nov 92

[Following item transmitted via KYODO]

[Text] The Kurdish radio station "Voice of Lachin" began transmitting broadcasts from the Azerbaijani regional center of the same name, which is currently controlled by Armenian formations. Weekly 35 minute programs are broadcast in Kurdish, Russian, and Turkish.

The station's main role, according to the headquarters of the Kurdish liberation movement in Yerevan, is to revive national consciousness among Kurds, and to establish their own statehood.

Approximately 500,000 Kurds live in Azerbaijan today, where the Kurdish Autonomous Region existed from 1923 to 1931 with its center in Lachin. However, the headquarters of the Kurdish liberation movement contend that due to forcible assimilation only 12,000 Kurds have their nationality indicated on their passports.

Finland-Estonia Fiber-Optic Link Nears Operation
92WT0244B Helsinki HELSINGIN SANOMAT in Finnish 19 Sep 92 p 6

[Article by Marko Jokela: "Fiber-Optic Cable to Estonia Nearing Completion"]

[Text] As things look now, a fiber-optic cable that will increase the number of data communication connections between Finland and Estonia, from Helsinki to Tallinn, many times over will be completed by the end of next month. The Post and Telecommunications Office and the Estonian Communications Office concluded an agreement on the construction of a digital radio link and an undersea fiber-optic cable as early as last April.

Running across the bottom of the sea from the shores of Kaivopuisto, the fiber-optic cable has reached the coast of Estonia and will run another 20 km as a ground cable to downtown Tallinn. The foundation work at the Tallinn end has progressed a bit more slowly than anticipated.

"Our goal is to have the cable line in operation by the end of October. The installation of equipment, measurements, and a test run take time," said Markku Pikkarainen, the head of the Tele-Engineering Cable team.

Telecommunication Connections Will Be Increased Manyfold

"This is an important project, especially for Estonian companies and their foreign contacts," Estonian Telecommunications Office investment manager Enn Vernik said.

According to Vernik, telecommunication connections capacity will increase nine times in comparison with what it was before.

Up to now, less than a hundred simultaneous telecommunication connections have been available between Finland and Estonia. And they are prone to interference. It is very difficult to call Estonia or fax materials to it, at least to do so quickly.

Connections With Rest of World Via Finland

From the standpoint of Estonian companies, poor telecommunication connections are inconvenient since most of the country's communications with the outside world are directed to Finland. Estonia also gets viable telecommunication connections with the rest of the world via Finland.

Finnish firms operating in Estonia also want reliable connections.

The fiber-optic cable connection that has now been laid will ensure a radio link, the capacity of which will probably not, however, alone be enough to accommodate telecommunications. Television images, with new channels, can also be transmitted with the aid of the fiber-optic cable.

Sweden, Finland To Aid Phone Net Modernization

93P20016A Helsinki HELSINGIN SANOMAT in Finnish 2 Oct 92 B 13

[Article by Mart Unelmas: "Estonia's Phone and Telecommunications Business Joining Nordic Firm"]

[Text] On Wednesday [30 September], the Estonian Government decided to give that country's telephone and telecommunications systems to a joint Finnish-Swedish-Estonian enterprise, which will manage and develop Estonia's telecommunications. The new company will handle all of Estonia's domestic and long-distance calls beginning with the new year. Estonia will own 51 percent of the company's shares. The remaining shares will be owned equally by Finland and Sweden. The goal for the company is to spend 10 years developing Estonian telecommunications at a projected cost of over 1 billion Finnmarkkas. Also starting from the beginning of 1993, Estonia is to get a new international trunk number. To call Estonia, the prefix 372 will then have to be dialed.

Tallinn Station To Broadcast in Russian, English, Finnish

OW2910192892 Moscow BALTFAX in English
1033 GMT 29 Oct 92

[Following item transmitted via KYODO]

[Text] Radio Tallinn will go on the air on November 1. It is the first Estonian commercial radio station to broadcast in foreign languages. This will be a round-the-clock FM

station with nine hours of programming in Russian, two in English and two in Finnish. The rest of the time will be filled with music. The signal will be received in a 30 kilometer zone.

Under the agreement with the city authorities the station was given the right to its name in exchange for broadcasting emergency announcements of the city council.

So far there are only five persons on the staff of Radio Tallinn.

Nordic Mobile Phone Net Expanding Into Russia
*92WT0244A Helsinki HELSINGIN SANOMAT
in Finnish 19 Sep 92 p 8*

[Article by Antti Penttinen: "NMT Network To Be Expanded Across Eastern Border; Relay Stations in Karelia Before Year's End"]

[Text] The Nordic Mobile Telephone (NMT) network will be expanding into Russia. An agreement was concluded between Finland and Russia on Friday which will promote the use of mobile phones, in particular in the areas close to the border. The agreement provides for the construction of an NMT-450 mobile phone network from Viipuri to Murmansk.

There is already a relay station in Viipuri, but it has not yet received an operating permit. The Tele [Post and Telecommunications Office] plans to build the next stations at Priozersk, Sortavala, Kostomuksha, Petrozavodsk, and Murmansk.

The relay stations will be linked with the Finnish network and the mobile phones will be used as they are in Finland.

In charge of foreign affairs for the Tele mobile phone services, Vesa Sevon believes that they will begin to build the new relay stations in Karelia by as early as the end of this year.

"Normally, the permit procedure should take nine months, but I think that the timetable will be accelerated," Sevon said.

According to Sevon, it takes no more than two weeks to erect a relay station once they get to work.

Viipuri Relay Station To Go Into Operation in November

Russian Communications Minister Vladimir Bulgak, who signed the agreement with [Finnish] Communications Minister Ole Norrback, promised on Friday that the Viipuri station could go into operation by the first half of November.

According to Vesa Sevon, areas will be covered by the new stations in which Finns circulate a great deal.

"We will build stations to meet the needs of traffic as they occur. We will not, however, be able to achieve completely comprehensive coverage in a short time." Depending on the terrain, one relay station covers an area of from 20 to 40 km.

Calls Made Through Finnish Stations

According to the agreement, mobile phones may begin to be transported across the border free of any administrative fees.

Up to now, officials have been able to collect and hold mobile phones for safekeeping at Karelian border stations on the basis of administrative regulations. Travelers have been allowed to take their mobile phones with them to St. Petersburg because a mobile phone system operated by a private company has been in operation there for a year now.

Users have been able to call Finland from near the border with an NMT-450 phone up to now too through the Finnish relay stations, but with varying success. For example, people on their way to St. Petersburg have been able to call Finland from the neighborhood of Viipuri via the local relay station.

Fiber-Optic Cable Ready by End of Year

The agreement signed on Friday will also improve ordinary telephone communications.

There is a fiber-optic cable already installed on power lines to the city limits of St. Petersburg. They expect to extend it farther through St. Petersburg's subway tunnels to within range of users.

The fiber-optic cable, which will convey digital telecommunications, will probably go into operation by the end of the year.

Finland's Nokia To Deliver Mobile Phone Net
*93WT0023A Helsinki HUFVUDSTADSBLADET
in Swedish 2 Oct 92 p 6*

[Unattributed article: "Nokia Telephones Delivered to Uzbekistan"]

[Text] Nokia has delivered an NMT 450 mobile telephone net to Uzbekistan. It is the first mobile telephone net in the CIS [Commonwealth of Independent States] outside of Russia. The contract is an important gain for both Nokia and NMT in a region totally lacking cellular nets until now. The telephones themselves are pocket and car phones of the NMT 450 type from Nokia Mobile Phones. The net was delivered to Uzdunrobita JV, a firm owned jointly by Uzbekistan's telephone ministry and the U.S. firm, International Communications Group (ICG).

In the first phase, the net will cover the capital, Tashkent. The delivery agreement was signed in May. The net has been in trial use since the beginning of August. It will be opened for commercial traffic next week. Uzdunrobita intends to expand the net first to include Samarkand and Buhara and later the entire country. The company expects to have about 60,000 subscribers within five years.

Nokia has already delivered the NMT system to about 20 countries and the Pan-European digital GSM system to 11 countries. The present contract includes a mobile telephone station of the Nokia DX 200 MTX type, base stations, transmission equipment, as well as pocket and car phones. Nokia has a strong position in the rapidly growing mobile telephone market in the CIS and East Europe. The most recent deliveries have been to Poland, Czechoslovakia, the Baltic states, and St. Petersburg.

REGIONAL AFFAIRS

Denmark To Provide Fiber-Optic Link to Lithuania

*92WS0831C Paris AFP SCIENCES in French
10 Sep 92 p 20*

[Text] Copenhagen—The Danish telecommunications manufacturer GN Store Nord (Great Northern Telegraph Company) and Telecom Denmark have signed an agreement with Lithuania's telecommunications administration Lietuvos Telekomas to install a 108-km system of fiber-optic cables. The network will be equipped with 7,680 telephone channels between Vilnius and the former Lithuanian capital Kaunas announced GN Store Nord on 7 September.

The agreement was signed 2 September in Vilnius, and represents an investment by the three partners of 20 million crowns (which comes to as many French francs). Construction of the network, which will be the first of its kind in Baltic countries, will be completed at the end of the year. It will be the first step in a larger fiber-optics network, Baltic Link, that will connect the Baltic states to North-South Link (NSL) in Poland. GN Store Nord's future installation of the NSL network will provide the Baltic countries with direct access to the international digital communications network.

European Fiber-Optic Market To Double in 5 Years

92WS0812A Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 14 Sep 92 p 3

[Text] According to a report just issued by market analysts Frost & Sullivan, rapid deployment of optical fibre technology in the local loop and in local area networks will

result in the European market for opto-electronic components and fibre cable almost doubling over the next five years.

The report estimates that in 1993 the European market for fibre-optic communications components will be worth US\$885 million. It will grow significantly, mainly through the expansion of the public telecommunications network and the buoyant LANs market.

But the fastest short-term growth rate will be in Germany, including the former East Germany, so that it will become the largest national market in 1993. The UK is, however, expected to overtake again by 1997 when it will be worth over US\$830 million.

The French market will grow at a similar rate to the UK and, by 1997, the three key national markets of the UK, Germany and France will account for over two-thirds of the total European market value.

Throughout Europe, this growth will be fuelled by an increasing demand for data interchange and fibre-optic based Local Area Networks in commercial premises. Other factors include deregulation of European communications networks with new commercial operation offering services in competition with the national telecommunications administrations. Extension in the use of fibre from trunk routes to offices, factories and homes is also identified in a study on the prospects for seven fibre-optic communications product categories within six key application areas throughout Eastern and Western Europe.

The biggest product category is single-mode fibre-optic cable with 1992 sales estimated at US\$404 million and rapid growth up to 1997 should result in a market worth US\$754 million. Almost all of this will be in public switched networks and undersea systems. The second biggest product group, transmitters, receivers and passive components will also show significant growth because of German telecommunications expansion.

European Fibre-Optic Markets (US\$million)

	1992	1997	cagr	overall growth
Transmitters & receivers	181.1	402.3	17.3%	122.1%
Passive components	7.2	17.3	19.2%	140.3%
Splicers & splicing kits	11.3	21.3	13.5%	88.5%
Test equipment	94.4	146.9	9.2%	55.6%
Multimode cable	102.6	228.7	17.4%	122.9%
Single mode cable	404.1	753.8	13.3%	86.5%
Total	864.6	1,703.6	14.5%	97.0%

Source: Frost & Sullivan

The smaller multimode fibre market, estimated at US\$102 million in 1992, will have one of the highest growth rates due to its continued use in LANs. There will also be higher growth in small hand-held test sets for servicing the LANs market, but these are relatively low-cost items.

Meanwhile, test equipment will have a comparatively low growth rate as extra equipment will not be needed pro rata with the expansion of public switched networks and the local loop.

The largest applications market throughout the forecast period will be the public switched network, estimated at US\$485 million in 1992. Highest growth, but from a very low base, will be in the local loop, forecast to grow by over 400 percent as a result of German investment.

LANs will show consistently high growth from their 1992 estimated US\$156 million value as more computers, and especially smaller desk-top and portable models, come into service.

Metropolitan area networks (MANs) and CATV will have slower growth but lowest expansion will be in the defence and aerospace sector because of declining defence spending. This market will rise only slightly above its 1992 value of US\$48 million.

Report E1658 costs US\$3,800 from Frost & Sullivan Ltd on + 44 (0)71 730 3438.

Eutelsat 2-F4 Set Into Service

93WS0020B Paris AFP SCIENCES in French
24 Sep 92 p 8

[Unattributed article: "Eutelsat 2-F4 Set Into Service"]

[Text] Paris—Eutelsat 2-F4, the fourth second-generation satellite of the European Satellite Telecommunication Organization (Eutelsat), which was placed in orbit by the 51st Ariane rocket on 9 July, was set into service on 18 September.

Eutelsat 2-F4 has reached its final position on geostationary orbit, at 7 degrees longitude east, above the Gulf of Guinea, next to Eutelsat 1-F4 which it will replace. During the next two weeks, business, television, and radio services will be transferred from the old to the new satellite. At the end of that period, Eutelsat 1-F4 will move to its new position on orbit, at 36 degrees longitude east; it will be used essentially for the Euteltracs land mobile service. In addition, next January the services of the European Radio-Broadcasting Union (UER) will be transferred from Eutelsat 1-F5 to Eutelsat 2-F4.

Built by a group of European manufacturers, with the French Aerospatiale as a prime contractor, Eutelsat 2-F4, thanks to its enhanced broad beam, provides more extensive coverage (beyond Moscow) of Eastern Europe than other satellites of the Eutelsat-2 series, in addition to its coverage of Western Europe. Like its "siblings," however, it is equipped with 16 repeaters which can operate simultaneously: seven with a large (72-MHz) Ku-band, and nine with a narrow (36-MHz) Ku-band. It has an eight-year service life.

CYPRUS

Telecommunications Chief Comments on Russian Agreement

NC1610112792 Nicosia CYPRUS NEWS AGENCY
in English 0820 GMT 16 Oct 92

[Text] Nicosia, Oct 16 (CNA)—The Cyprus Telecommunications Authority (CYTA) and its Russian counterpart, the Russian Cosmonautics Federation, initialed Thursday a cooperation agreement linking the Russian Federation with the rest of the world through Cyprus, Nikos Kountas, CYTA chairman has said.

In an interview with the CYPRUS NEWS AGENCY, Kountas described the agreement as "of immense significance to Cyprus" and added it would entail "real financial and other benefits for the island."

"This was beyond our expectations," he remarked.

Commenting on the CYTA-Russia agreement, President Yeoryios Vassiliou said it represented an integral part of the memorandum on the principles for economic cooperation

between the republic of Cyprus and the Russian Federation, signed in Moscow Thursday by President Vassiliou and Russian leader Boris Yeltsin.

The telecommunications agreement was initialed by CYTA Chairman Kountas and Gennadiy Tamcovich, vice president of the Russian Cosmonautics Federation and deputy director of the Russian Academy of Sciences.

Speaking to CNA on Thursday on his return from a day-trip to Moscow as a member of a Cypriot delegation, headed by President Vassiliou, he said CYTA and the Russian Federation initialed "a declaration of intent to set up a telecommunications system linking Cyprus directly with the Russian Federation."

The agreement aims to provide services (telephone, telex, video conference) between the two countries as well as between Cyprus and countries in the Middle and Far East, the Mediterranean, North Africa and Europe.

The linkage will be through Russian space satellites and earth satellite stations in Cyprus and Russia, Kountas explained.

It is expected the relevant agreement will be signed in mid-November when the two delegations will meet to formalise the agreement, he added.

He said the satellite link will probably be put into operation in mid-April 1993.

FINLAND

Nokia Official Doubts Future of HD-MAC

92WS0779B Paris AFP SCIENCES in French
6 Aug 92 p 17

[Unattributed article: "Europeans Will Not Have High-Definition Television Before 2005, a Nokia Official Predicts"]

[Text] Amsterdam—Europeans will be unable to get HDTV [High-Definition Television] at home before 2005 because of a lack of high-definition programs, an official of the Finnish firm Nokia (the third leading European producer of color television sets) stated during an interview with the Dutch economic daily FINANCIELE DAGBLAD published on 4 August.

According to Mr. Schepers, who said he was speaking only for himself, the HD-MAC [high-definition/multiplexed analog component] standard developed jointly by Philips, Thomson, and Nokia, is doomed. "HD-MAC is technically feasible, but not commercially viable," Mr. Schepers added; the future, he said, lies in digital television. According to Mr. Schepers, the investments required to produce programs in D2-MAC and then in HD-MAC will be too costly, and he therefore recommends a large screen/Pal [phase alternate line] Plus combination.

Nokia also strongly denied these statements. Nokia's Research and Development vice president, Mr. Helmut Stein, first indicated that Mr. Schepers was the head of a Nokia Research and Development center near Stuttgart and had "nothing to do with HDTV," and he added: "Nokia has steered the same course for five years. We are still developing D2-MAC and HD-MAC systems."

In June 1991, Nokia announced that it had chosen 16/9 TV screens, the first stage toward HDTV. The Finnish firm had indicated that it expected to introduce some 15 models in this format in the next 10 months; these models could comply with the PAL-SECAM [sequential memory color] standard as well as with the D2-MAC standard, the transition stage toward HDTV.

Plan Approved for Competition in Phone Services
92WT0245A Helsinki HELSINGIN SANOMAT
in Finnish 18 Sep 92 p 8

[Article by Jarmo Aaltonen and Mikael Pentikainen: "Competition Coming to Domestic Phone Lines in 1994"]

[Text] It is believed that the reorganization will considerably lower telephone rates. To be incorporated, the Post and Telecommunications Office (PTL) is going to lose its monopoly. Domestic telephone service is to be opened to competition as of the beginning of 1994, which will lower local and long-distance rates. The government decided on the matter Thursday [17 September], when it granted new operating permits to telephone companies.

Furthermore, the government made a decision in principle to incorporate the PTL at the start of 1994.

According to Communications Minister Ole Norrback (Swedish People's Party), after the decisions are made Finland will be the leading country in the world in telecommunications competition.

The new operating permits will not, however, mean free competition since any two companies generally compete in different areas. Moreover, operating permits will be granted by the Council of State.

At the Communications Ministry they estimate that long-distance rates will drop as much as 55 percent within a couple of years, from the current 36-50 pennia to 25 pennia a minute.

According to ministry estimates, local calls will cost from 5 to 10 percent less than now.

The price reductions will, according to the ministry, reduce what the national economy spends on phone calls by 670 million markkas a year, about 180 million markkas of which is accounted for by households.

Two Companies' Long-Distance Competition

Communications Ministry department head Vesa Palonen estimates that, with competition, phone calls from outlying districts will be more expensive than calls from built-up areas.

The government appended a statement to its decision, to the effect that the Communications Ministry must intervene in a situation if "significant" local price differences arise.

Both the PTL and the Kaukoverkko [Long-Distance Network] Ysi Company, which is a local company owned by telecommunications services and the Datatie [Data Channel] Company, will be competing for long-distance service.

The ministry estimates that both companies will have a sales volume of about 200 million markkas by the end of the 1990's.

According to the ministry's calculations, the competing long-distance networks will require about 500 million markkas in investments.

The Telivo Company, a subsidiary of the Imatra Power Company, has also been granted the right to provide limited long-distance service. The company primarily engages in telecommunications operations between electric power companies.

Telivo had also applied for the right to engage in international telecommunications activities, but its application was denied. The PTL still holds a monopoly in international telecommunications activities.

Local telephone companies will acquire the right to operate in areas in which only the PTL at present operates. The PTL will in turn gain access to areas in which private telephone companies operate.

PTL as a Corporation

Nearly 70 percent of all Finns are now customers of local telephone companies and 30 percent of them of Tele [Public Telecommunications Agency]. The ratio is otherwise when calculated in terms of the country's surface area.

The Communications Ministry estimates that about 1.2 billion markkas in investments will be needed during the next few years for local network operations.

The incorporation of the PTL and competition in the field of telecommunications will mean that the PTL will not in future debit its profits to the state's account. In accordance with the budget, the company will still be debiting the state with 240 million markkas in 1993.

Communications Ministry administrative office chief Juhani Korpela estimates that the state will lose about 100 million markkas in 1994 since state telephone expenditures will also be reduced through competition.

It has not yet been decided whether the PTL is to become one company or several companies. The government will be submitting a bill on the incorporation of the PTL to the Eduskunta at the end of the year.

Personnel Fear Notices of Termination

The incorporation of the PTL and telecommunications competition will result in notices of termination and considerably reduce company personnel's benefits.

PTL metal workers shop steward Kari Vilkman estimates that telecommunications competition will mean termination notices for 3,000 PTL employees. In addition, several thousand private telephone company employees may be given notice.

"This reorganization will be implemented with an awfully heavy hand and will be carried out with a rapid timetable," Vilkman fears.

PTL managing director Pekka Venhamo (SMP [Finnish Rural Party]) will probably bring proposals regarding layoffs to the meeting with private phone company representatives when he meets with them today. This issue will probably be an issue of dispute during the wage talks in the fall.

At the Communications Ministry they think that the provisions for giving PTL personnel notice will have to be changed with the incorporation of the company. In the ministry's opinion, service personnel will be losing the "exceptionally favorable" termination notice provisions that they obtained when the PTL became a commercial enterprise.

Business Regulations on Data Transfer Eased

*93WT0014B Helsinki HELSINGIN SANOMAT
in Finnish 29 Sep 92 p 7*

[Article by Marko Jokela: "As of Beginning of October, Low Volume of Telecommunications Operations To Be Exempted From Permit Requirements"]

[Text] The exemption of telecommunications operations from permit requirements is to be extended. According to new Communications Ministry regulations, a low volume of telecommunications operations is to be exempted from permit requirements as of the beginning of October.

A permit will not be required for the transfer of data in independent networks comprising less than 400 hookups and these operations will not have to be reported to the ministry. The transfer of data via public radio, that is, datacast service, for less than 50 customers, will also be exempted from permit requirements.

Local radio stations that have been experimenting with the distribution of radio news for the visually impaired, among other things, with temporary permits will in particular benefit from the datacast reform. The Finnish Broadcasting Corporation has been granted the right to operate the datacast service in larger networks.

Messages in computer language are transmitted through data transfer. It will also be possible to transmit voice and images to some extent as of the beginning of October.

Businesses Allowed To Lease Radio Networks

The new regulations issued by the Communications Ministry will enable business firms to lease internal telecommunications networks to other users without a permit if the leased time represents a small portion of the total use of the network.

The liberalization of permit procedures will also afford business firms the opportunity to lease telephone exchange services owned by them to other businesses operating on the same premises in connection with their business activities. To share an exchange at the present time, each business using the exchange is required to enter into a separate hookup agreement with the Telecommunications Office.

At present service cannot be provided directly from a sublet exchange network hookup to another telecommunication area without a separate permit. A telephone or other telecommunication connection has to be made through a

Telecommunications Office network that provides long-distance telecommunications services. This restriction will be removed as of the beginning of October.

Communications between hookups that are not part of the two networks still cannot be transmitted through the exchange network.

A permit is still not necessary for telecommunications in independent networks required by electric companies and for the use of and monitoring by municipal technical facilities. Networks needed for communications control may also be built without restrictions.

Tele Chief Tarjanne on East Europe Market

*92WT0014A Helsinki HELSINGIN SANOMAT
in Finnish 29 Sep 92 p B 2*

[Article by Marko Jokela: "East Europe Offers Big Telecommunications Markets"]

[Text] Having broken their political shackles, the East European countries offer Western companies big telecommunications markets. "The telecommunications markets are growing rapidly and they have become a favored object of investment," Hungarian economist and Hungarian Telecommunications Company management adviser Krisztina Heller declared.

Heller is convinced that, in addition to profits that can be repatriated, money invested in the telecommunications sector also has a stimulating effect on the whole nation.

The Central and East European telecommunications sectors are behind in their own characteristic ways.

"In the opinion of some, they will rid themselves of their retarded condition with the same means as in the more developed countries. This isn't true," Heller emphasized.

Course of Development Over 100 Years

The United States, Sweden, and Finland, among others, have been developing telecommunications for about 100 years. Heller divides the period into three phases.

During the first phase lasting about 30 years, there was typical free competition between telephone companies. There was very little need for telecommunications and the industry did not attract investments.

The next 60 years was a period of tighter regulation. At the same time telephones became more widespread.

During the past decade, the telecommunications sector has been going through a period of significant removal of restrictions, privatization, and deregulation. During this phase, characteristically specialized telephone services have come into being.

"It is obvious that the developments that have been achieved in this century will not be seen in the underdeveloped telecommunications countries of Central and Eastern Europe in the space of one, or even two decades."

Telecommunications in the developing countries have been built and organized with the help of these countries' domestic financing. According to Heller, this has been the result of slow development.

"Rapid steps in the countries of Central and Eastern Europe presuppose external financing.

"How the underdeveloped countries can preserve their national sovereignty when they have to simultaneously privatize their telecommunications is a big question."

Heller delivered the opening address at the annual IIC (International Institute of Communications) meeting in Montreal.

Finland is a very small factor in the world telecommunications market.

"It is, after all, easy for a powerful telecommunications company that has acquired a monopoly on a huge domestic market to spread round the world and demand the removal of trade regulations in the telecommunications sector," Telecommunications Office director Juhani Vienola sighed.

The U.S. telecommunications company, AT&T, is a model example of a supranational telecommunications giant that has amassed good coverage from its domestic market.

"Storming another English telecommunications market, the U.S. company's investment came to \$600 million. That's a lot of money."

The Germans are not as energetic telecommunications raiders as the Americans. The reason is obvious: "It will cost them an estimated 150 billion markkas to bring the eastern German telephone network up to the standards of the western German network."

Finland's chances of countering the attacks of the supranational telecommunications giants are slim. The telecommunications industry requires huge investments, for which Telecommunications Office resources are insufficient.

"We're aiming at investing only in areas close to Finland: the Baltic countries and the surrounding area of what was formerly Leningrad, and we'll try to look for profits there. We're not striving for larger projects than those we can afford to finance." According to Vienola, Telecommunications Office investments in areas close to Finland "so far add up to several hundred million markkas."

According to Vienola, the Telecommunications Office's knowledge of mobile communications constitutes its most characteristic and strongest know-how. Mobile communications are just the thing for the needs of less developed countries.

"The development of a mobile communications network is a faster way of progressing than the development of a conventional cable phone network."

The IIC is an independent organization with its headquarters in London whose members are representatives round the world of public radio companies, communications researchers, various communications media, telecommunications companies, and communications officials.

"The fact that this year's meeting drew nearly 400 participants to Montreal says something about the importance of the IIC," Vienola said.

During the second week of September Asians, and among them especially the Japanese, were represented in large numbers at the annual meeting. In addition to Finland and

Japan, Australia, Canada, France, Germany, England, and the United States are active IIC countries. The next annual IIC meeting is to be held in Mexico and the 1994 meeting will be in Tampere.

"The IIC is an excellent way of keeping up with developments in the industry, sniffing out new trends, and making important contacts."

According to Reijo Svensson, the director of the Telecommunications Administration Center, the IIC meeting is important for shaping the provisions of international telecommunications regulations and for informing people about what is available to them.

"Finland is one of the countries that is pioneering as a mediator of different telecommunication standards. We have a lot to offer the IIC."

Founded in 1967, the organization at present has over 70 member countries.

ITU General Secretary Pekka Tarjanne: Developing Countries Will Not Improve Without Developing Communications

Dr. Pekka Tarjanne, the general secretary of the International Telecommunication Union (ITU), under the authority of the United Nations, considers the improvement of communications to be of vital importance to underdeveloped countries.

"The exporting of telecommunication knowledge, skills, and equipment to all underdeveloped telecommunications countries is an important mission of Western countries. I don't believe that the former can ever get their social development programs off the ground unless their communications industries are in good shape. With respect to this, telecommunications constitute a development objective that is of primary importance," Tarjanne emphasized.

Tarjanne noted that in past years the ITU was a bureaucratic agency that was behind the times and fettered by rules and regulations. He also pointed out that the telecommunications industry used to be nationally owned and controlled and subject to national rules. "There were no supranational companies in the present sense of the term."

"Some people used to say that the ITU wasn't responsive enough to changes in the telecommunications industry and the economy. And that was indeed the situation. The ITU was simply nothing more than a faithful mirror of the industrial sector that it represented and regulated."

Tarjanne is not worried about the future of his employer—although telecommunications is one of the fastest growing industries in the world and one that is undergoing a constant storm of change.

"The ITU hasn't been trampled underfoot by development, not yet at least, but this is no time for us to sit here and twiddle our thumbs, not even for a minute. The rate of change will only be accelerating," Tarjanne thought. He cited as an example the standardization of the telecommunications industry. No one used to wonder why the ITU would only come up with a recommendation eight years after the existence of a problem had been revealed.

"Now we've gotten it down to one year, and that will soon be too long to wait."

"Finland Has Nothing To Be Ashamed Of"

The ITU's three areas of operation are the worldwide standardization of telecommunication networks and services, the distribution of the different radio frequencies, and aid for development. "Major challenges for the ITU are in sight in all three of these sectors."

According to Tarjanne, Finland has nothing to be ashamed of as compared with the international situation. "Finland's telecommunications affairs are in good shape. Services, telecommunications networks, and price levels rank high internationally. But whether Finland will preserve its standing is quite another matter. If Finland's telecommunications industry people become too complacent, just sit there twiddling their thumbs, the death knell will begin to sound for them."

Phone Industry Chief on Privatization Outlook

*93WT0016A Helsinki HELSINGIN SANOMAT
in Finnish 2 Oct 92 p B 16*

[Article by Marko Jokela: "A Fourth of Market to Private Companies"]

[Text] Kurt Nordman, chairman of the Association of Telephone Companies, estimated that private telephone companies would conquer a quarter of the long-distance market during their first year of competing. The long-distance market opens up for competition in the beginning of 1994.

When the long distance market opens up to free competition, the telephone user can choose the most favorable telephone company, by dialing the prefix assigned to the company of choice before dialing the actual phone number.

"The consumer will also be allowed to permanently select via which long distance network his telephone calls are to be routed," Nordman reminded us, during the annual telephone company conference in Kajaani, last Thursday.

According to Nordman, the most important competitive advantage available to the telephone companies, is their ability to provide service close to their customers.

"This will not change, although it will become easier for phone companies to operate on a national scale. Nor will the starting point change, when international telephone communications, as the last bastion of monopoly, sheds its shackles. I am sure that this is going to happen fairly soon," estimated Nordman.

Competition Lowers Long-Distance Charges

A year ago, the telephone companies founded a new venture, Kaukoverkko Ysi Oy, which received an operating permit for long-distance telecommunications, starting in the beginning of 1994. Arno Tanhuanpaa, CEO of the Association of Telephone Companies, made the following observation: "Competition in the long-distance telephone market is going to drive the price of long-distance calls down to the cost level, which means that the drop could be close to 50 percent."

According to Tanhuanpaa, Kaukoverkko Ysi Oy will attempt to seize a 50-percent market share within a few years.

Kurt Nordman believes that competition in the local telephone market will result in new options being offered primarily to high-volume users.

"The high-volume user is going to receive volume discounts on his local calls, and this is going to change the uniform pricing system for telephone calls," noted Nordman.

According to Tanhuanpaa, local calls are generally not subject to overpricing which could be trimmed down by competition: "Currently, telephone rates for local calls are the same for both low and high-volume users. Competition could cause discounts for high-volume users, but this would cause lower revenues for phone companies, and would force telephone rates up for low-volume users."

Price War Threat

Transportation Minister Ole Norrback (Swedish People's Party), regretted the fact that the structural changes in the telecommunications industry, the recession and the beginning of competition, are all occurring at the same time.

"In the beginning when this happens, we must swallow some bitter pills, of which the unemployment issue is one of the most difficult. However, in my view, all of the problems are not caused by opening up the market to free competition," he noted.

Norrback found it "especially courageous (as published) that unreachable areas are also included in the competition." He stated that he expected to see proof that telephone operations even in sparsely populated areas could be handled in a profitable manner.

"Blindly rushing into price competition should be considered the real threat. Pricing is one of the most powerful tools of competition, but it should be used with prudence. The result of price competition should not be a weakening of the low-volume user's position," reminded Norrback.

Government Monopoly on Telegrams Ends

*93WT0016B Helsinki HELSINGIN SANOMAT
in Finnish 12 Oct 92 p 5*

[Unattributed article: "Telegram Competition"]

[Text] The Postal and Telegraph Administration's monopoly in forwarding telegrams came to an end in the beginning of October, at which time telegram forwarding became a business activity available to all telecommunications companies. According to the new Telecommunications Ordinance and Regulations issued by the Transportation Ministry, permission is only needed for the use of ornamental forms, which benefit charitable and nonprofit organizations.

The Ministry no longer determines on behalf of which charitable and nonprofit organizations ornamental forms can be sold, as previously was the case. Last year, the Postal and Telegram Administration paid about 5 million markkas, from the ornamental telegram revenues, accrued

to charitable and nonprofit organizations. The organizations receive a little more than half of the proceeds, while they receive almost 70 percent of the revenues from ornamental folders.

Ministry Orders Agency To Follow GSM Price Rules

93WT0016D Helsinki HELSINGIN SANOMAT in Finnish 19 Oct 92 p 6

[Unattributed article: "Mobile Phone Call Pricing"]

[Text] The Transportation Ministry demands that the Postal and Telegram Administration clarify whether Tele's GSM pricing is in accordance with current regulations. It has been alleged, among other things, that Tele has given discount rates on NMT telephones to customers who also acquire GSM connections from the company.

The competitive rules, effective in the beginning of October, prohibit the lowering of rates on the basis that the customer also purchase from the telephone company some other service, or promises to refrain from acquiring such service from a competitor.

In Finland, Tele is the only distributor of NMT mobile phones. In addition to the government-owned Tele, a GSM mobile phone network is also being built by its competitor, the privately owned Radiolinja Oy.

Phone Company in Eurobell Data System Venture

93WT0016C Helsinki HELSINGIN SANOMAT in Finnish 21 Oct 92 p B 12

[Article by Marko Jokela: "Finnish-British Joint Venture"]

[Text] The Helsinki Telephone Association (HPY) has, together with its subsidiary Oy Comptel Ab, signed a cooperation agreement with the English organization, Eurobell, Ltd. The purpose of the agreement is to provide Eurobell with the TelePro information system, which was developed by Comptel.

"The agreement gives us an opening, a foot in the door, to the British telephone markets," said Jukka Alho, technical manager for HPY.

According to Alho, the TelePro system provides such features as billing, customer service, order handling, service follow-ups, as well as extensive data base services. "TelePro is one of the few available software products which fulfills all the needs of a telephone company," boasted Alho.

Also according to Alho, the monetary value of the agreement is only a few million markkas. Alho added that the Americans have entered, and are still entering, the British telephone markets, and they are investing large amounts of money, up to hundreds of millions pounds, in the field, buying and establishing telephone companies.

"The situation in England is interesting, because many regional telephone companies are under development there. The cable TV companies have also received permission to build telephone networks, and some of these companies are specifically attempting to become providers of telephone networks," explained Alho.

According to Alho, in England a large number of telephone companies have been created, and they are actively looking for cooperation with other companies. "Many English companies have visited Finland to learn how to start and manage a small or medium-size telephone company," he added.

Eurobell is targeting a telephone network of approximately 20,000 subscribers, by the year 1994. The network will later expand to accommodate about 80,000.

Comptel is also going to deliver its TelePro system to Hungary in the beginning of next year.

Hungary, with its population of 11 million, has 12 telephones per 100 people, while the corresponding figure in Finland is an average of 56 telephone per 100 people.

Lower Long-Distance Rates

"The political decisionmakers have had the fortitude to deregulate the telephone industry, as well as remove monopolies and obstacles to free competition. Even the sector of international data transmissions has, to a significant degree, become subject to competition from the beginning of this month," rejoiced Kurt Nordman, the chairman of the Association of Telephone Companies, in an opening speech at the Third National Telecommunications Days, at the Finlandia House in Helsinki.

According to Nordman, freer competition, from the beginning of 1994, in the field of long-distance telephone service, will also be of significance to users. "The structure and cost base of the new network is very favorable, and it will show in low user rates," he claimed.

According to a projection by the Transportation Ministry, long-distance telephone rates will be cut in half within the first two years of free competition. "This is rather a conservative than a bold estimate," said Nordman.

In Nordman's view, Finland and Europe are changing into a single large local data transmission area. "This is a development that cannot be prevented by resurrecting artificial barriers against free competition, and luckily enough the legislators concur with this concept of open markets. In Europe, we are enjoying a reputation as radicals," he concluded.

FRANCE

France Telecom Presents Enhanced HD-MAC Coding

92WS0779C Paris AFP SCIENCES in French 30 Jul 92 pp 16-17

[Unattributed article: "France Telecom Presents a New Image of High-Definition Television"]

[Text] Paris—On 22 July, two days before the opening of the Barcelona Olympic Games, France Telecom introduced an improvement of the HD-MAC [high-definition/multiplexed analog component] coding systems that will enable households to receive HDTV [high-definition television] with a small-diameter parabolic antenna.

Mr. Jean-Claude Delmas, in charge of HDTV at France Telecom, also presented the satellite network around the Telecom-2A satellite, which will rebroadcast the Olympic events in five languages to 700 European HDTV demonstration sites, every day from 10 a.m. to 1 p.m. The signal improvement was obtained by increasing the transmission power of the Telecom-2A satellite; this was achieved by altering a transmission parameter in the multiplexed system that composes the HD-MAC signal.

In Europe, France Telecom acts as a pilot when it comes to HDTV, thanks to its experience with the "Savoie 1,250" program during the Albertville Olympic Games, which were broadcast in high-definition television to 50 European sites. This is why the Telecom-2A satellite is at the heart of the European broadcasting network for the "Barcelone 1,250" program.

This network, which is fully redundant for added safety, includes five other satellites: TDF-1 and TDF-2 (France), TV SAT-2 (Germany), Olympus (European Space Agency [ESA]), and Eutelsat-II-F3 (European Satellite Communication Organization). France also makes its high-definition equipment (cameras, coders, decoders, etc.) available to its European partners.

From Albertville to Barcelona, the technology was appreciably improved, especially to give households direct access via satellite to images in D2-MAC, the current coding standard which is compatible with the future HD-MAC standard. For the moment 16/9-format TV sets equipped with a D2-MAC decoder are relatively expensive (from 12,000 French francs [Fr] to about Fr30,000 for the Thomson Space System-90 set), and small-size parabolic antennas do not always pick up the entire signal.

Altering the transmission of the HD-MAC signal made it possible to increase the transmission power of the Telecom-2A satellite, and therefore to reduce the diameter of the receiving antenna: the demonstration made by France Telecom showed equally good reception with a 75-cm antenna and a 60-cm antenna. With the present technology, France Telecom advises households to use a 75-cm antenna, which is large enough for proper reception of the Barcelona Games by transparency, via the Antenne-2 channel, and small enough not to suffer interference from Telecom-2A neighbor satellites.

Thomson, Philips Criticize Government's Ruling Against D2 MAC Standard

92WS0802A Paris LE MONDE in French 9 Sep 92 p 19

[Article by Pierre-Angel Gay: "Electronic Manufacturers on the Defensive"]

[Text] Consumer electronics makers had awaited the government's ruling in favor of Canal Plus for several weeks. The decision stipulates that the Telecom 2A satellite will simultaneously rebroadcast seven stations in SECAM and only four in D2 MAC (see LE MONDE, 8 Sept). The presentation of the agreement on Monday, 7 September, did nothing to dispel manufacturers' reservations.

The defeat was expected, but was no less cruel for all that. Cruel for Thomson Consumer Electronics (TCE), and especially for Philips Consumer Electronics, whose CEO, Francois Mauduit, stuck out his neck to oppose the option

advocated by Canal Plus of a "patchwork" of SECAM 4/3 and D2 MAC 16/9 channels on the Telecom 2A satellite. "Deserted" by the minister of industry Dominique Strauss-Kahn, who is hostile to the "D2 MAC ideology" despite the opinions of his departments, the manufacturers had known for several weeks that the government would not rule in their favor.

So, officially, Europe's consumer electronics giants are putting the best face they can on it. "The uncertainty had to be ended," say TCE staff, stressing their "satisfaction that the 16/9 [big screen] was selected as the format of the future—one in which we believe and in which we have invested a great deal." The new sets appeared on retailers' shelves last winter, and new, more "affordable" ones (under 15,000 French francs, Fr) have since been marketed. "The new D2 MAC pictures broadcast on Telecom 2 should help our retailers with their demonstrations," adds the public group. Indeed, starting in mid-1993, the satellite is scheduled to broadcast nearly 20 hours of programs in D2 MAC 16/9.

All the same. The government's decision to set aside seven channels for the current SECAM 4/3 standard, against only four that will gradually shift to the D2 MAC 16/9, will not make it any easier for the new norm to penetrate the French market. First, because any "standards war" worries consumers and delays the production of equipment.

"A Jungle of Cords and Boxes"

Second, because manufacturers are afraid of the technical consequences of the government's choice. As the president of SIMAVELEC (Union of Electronic Audiovisual Hardware Industries), Mr. Mauduit had emphasized in advance the difficulties in store for new channel subscribers who want to receive and tape programs encoded in both SECAM and D2 MAC. One specialist describes the resulting scene as a "veritable jungle of cords and boxes." It will also involve hefty additional costs in the long run, when manufacturers market multistandard devices.

These handicaps are especially harmful as there is still uncertainty on more than one score about how attractive future D2 MAC programs will really be. Besides simply duplicating the programs of Canal Plus, Cinecinema, and France-2, the government has announced the creation of a "fourth" programming station, to be made wholly in D2 MAC 16/9.

Canal Plus has agreed to cover one third of the new channel's expected shortfall, with the remainder to be raised within the Community and among...manufacturers. The latter, which did not sign the agreement between Canal Plus and the government, do not feel any obligation whatsoever.

"It is never a good thing when station operators get involved in manufacturing—or the other way round," is the joke at Philips, which does not, for now, give the future channel much chance of actually being born.

Telecom Satellite To Broadcast 2 Channels in D2 MAC

Details of Transmission

92WS0822A Paris ELECTRONIQUE HEBDO in French
10 Sep 92 pp 1, 12

[Article by H.T.: "Telecom 2A Gives a Boost to D2 MAC"]

[Text] On Monday, 7 September, the Postal and Telephone Ministry announced minister Emile Zuccarelli's decision to authorize the Telecom 2A satellite to broadcast four D2 MAC and seven Secam channels that are now available on cable. According to the minister, the agreement signed by Canal Plus's Andre Rousselet, the state secretary of communication Jean-Noel Jeanneney, and the president of France Telecom Marcel Roulet "marks a decisive step in the promotion of big-screen 16/9 television, which can only be broadcast using D2 MAC, and the growth of direct satellite reception."

Canal Plus has committed itself in the agreement to making "special efforts" to broadcast in 16/9 format, in exchange for the right to use Telecom 2A to broadcast a group of seven Secam channels that are scrambled using the station's new encoding system Syster. Canal Plus has marketed the channels as direct-reception satellite channels through one of its subsidiaries, Canalsatellite. The stations are already available on cable, and [the programming for] some of them is produced by a Canal Plus subsidiary called Ellipse.

Three D2 MAC channels have already been selected. One of them will duplicate (at 80 percent) Canal Plus's film broadcasts in 16/9 and retransmit sporting events.

The two other channels are Cine-Cinema for enlarged-format films and Antenne 2 (France 2 as of Monday). France 2 has "been asked" to step up its efforts to broadcast sports and most of its movies in 16/9. The most useful part of the 16/9 pictures will be selected when programs are simulcast in 4/3.

Four Ways To Receive Telecom 2A

Television viewers will have four ways to receive Telecom 2A. Customers who wish to receive only Secam channels will purchase a terminal including a tuner-demodulator and Secam decoder for about 1,500 French francs [Fr]. Canal Plus will supply them with a Syster decoder, developed by Sagem Co., when they subscribe. To receive everything, viewers will need a versatile terminal (tuner-demodulator, D2 MAC and Secam decoders, Eurocrypt descrambler). These are being marketed by several equipment makers, including Philips, Nokia, and Amstrad, and cost between Fr4,000 and Fr6,000. Some of the terminals are modular and some are housed in a single unit. Customers also buy the dishes (Tonna is a big supplier). The cost of a Secam installation will be less than Fr3,500; a D2 MAC and Secam installation will run about Fr7,000. For cable reception, France Telecom is offering the Visiopass terminal to cable operators, who rent it to their subscribers. Other suppliers for all this hardware are expected to spring up quickly and bring down prices fast. The broadcast studios of Canal Plus are already equipped with 16/9 gear.

The number of cable subscribers (1.1 million) and direct satellite receivers (0.1 million) in France is quite low compared to Germany or the United Kingdom. Getting Telecom 2A going may enable us to catch up a bit. Kagan World Media, a research firm, predicts there will be 2.2 million cable subscribers and 0.7 million direct-reception installations by 1996.

Commentator Sees Half-Step

92WS0822B Paris ELECTRONIQUE HEBDO in French
10 Sep 92 p 36

[Article by J.-P. D.M.: "D2 MAC Half-Measures Could Lead to a Half-Failure"]

[Text] *Canal Plus has only committed itself to transmitting two D2 MAC channels in 16/9 format on the Telecom 2A satellite (see pages 1 and 12).*

Canal Plus's president Andre Rousselet scored a victory over French government authorities when he succeeded in getting his seven channels on Telecom 2A, and in transmitting them in Secam 4/3 with Syster scrambling as he wanted. He will pay a pittance for this guaranteed monopoly: Fr25 million per year, per channel to rent the repeater—a low but normal price—and about Fr50 million to convert to 16/9 and transmit two of his stations in D2 MAC. (The third, Cine-Cinefil, will be broadcast only in D2 MAC 4/3. One has to wonder why this old-movie channel, which does not require high quality, was chosen over a sports channel, where the 16/9's extra inches would have been appreciated. As for the startup of a future channel, it is too hypothetical to merit discussion. Finally, Canal Plus will not, in practice, pay to rent the D2 MAC channels.) To make its lack of interest in D2 MAC abundantly clear, Canal Plus will not include the price of the D2 MAC decoder/descrambler in its subscription rates for D2 MAC channels.

It is true that Mr. Rousselet was the only one to propose anything to "occupy" the Telecom 2A satellite, which is dedicated to D2 MAC but unused. It is also true that, since the news of successful experiments with compressed digital transmissions in the United States, Mr. Rousselet considers the D2 MAC standard outmoded. But D2 MAC is so far the only available 16/9 vector that is capable of offering a technical improvement viewers can see. We must decide: Either France has an industrial policy for television or it doesn't. If it has one, viewers must be offered a real service, that is, the possibility of getting at least the five traditional channels in D2 MAC (at least three of which must be in 16/9 to "prime the pump"). And they must be able to get them using one Eurocrypt decoder and a single antenna that picks up one or more satellites in the same orbital position. If France has an industrial policy, it will have to find a way to offer TF1, France 3, and M6, three D2 MAC 4/3 repeaters on a future satellite—in the same orbital position as Telecom 2A—for at least three years. The marginal cost would be three times Fr25 million over three years, or Fr225 million. Not so bad, really. In fact, if it is truly necessary to add a satellite with three D2 MAC channels, why not place the latter in the same orbital position as TDF1 and TDF2? Those stations' four D2 MAC channels—France 2, Canal Plus, Arte, and MCM—are now working well. Such a move would create a package of seven D2 MAC channels, two in 16/9 and only one

pay-TV—an attractive alternative to Mr. Rousselet's Secam package for subscribers only.

Government, Canal Plus Reach D2 MAC Agreement

92WS0832D Paris AFP SCIENCES in French
10 Sep 92 pp 18-19

[Text] Paris—After over six months of negotiating whether the Telecom 2A satellite's broadcast standard should be D2 MAC or Secam, the government has reached a compromise with Canal Plus. The agreement shores up the pay-TV station's position in the scrambled channel market, while saving efforts to promote the D2 MAC, the European interim standard for future high-definition television (HDTV).

The terms of the accord announced 7 September stipulate that the Telecom 2A satellite, which also beams telephone and military transmissions, will broadcast seven scrambled channels using the current Secam 4/3 standard and format, and four stations in D2 MAC-Eurocrypt in the 16/9 "cinema" format.

The compromise ends a tug-of-war that lasted over six months. Consumer electronics manufacturers (Thomson, Philips) wanted to sell their new 16/9-format television sets. The government intended to promote the European HDTV standard. Canal Plus's CEO Andre Rousselet, who owns stock in the station's package of programs, was anxious to retain control over the Syster decoders that the scrambled channel developed itself. In contrast to Canal Plus's scrambling system, Eurocrypt is an "open system," and thus available to different manufacturers.

The four channels broadcast in 16/9, which will go up on the satellite around 15 November, are France 2 (the former Antenne 2), Canal Plus, Cine-Cinema, and—the only programming to be broadcast exclusively in D2 MAC/16/9—a future station which for now is dubbed Canal ++.

Telecom 2A was originally to have been reserved entirely for D2 MAC, but its channels remained empty except for a few sporting events that were rebroadcast in 16/9. According to Mr. Zuccarelli, the solution struck enables France to be the first country to offer "such a wealth of programs in 16/9." In mid-1993 and not counting Canal ++, Telecom 2A's different channels should offer 20 hours of programming in that format each day.

Television viewers, who will be receiving the programming via satellite dish, will have to juggle the different types of equipment: a satellite tuner in all cases (integrated into or separate from the decoder); a Canal Plus Syster descrambler to subscribe to the package of programs in Secam only; and a Eurocrypt decoder to subscribe to 16/9 channels.

Emile Zuccarelli on HDTV, D2-MAC, Cable, Satellites

93WS0015X Paris MESSAGES in French
Sep 92 pp 26-27

[Interview with Emile Zuccarelli, minister of research, technology, and space, by Pierre Salanne; place and date not given: "Emile Zuccarelli: More Pictures, More Europe"]

[Text] *Cable, satellite, HDTV [high-definition television], D2-MAC [multiplex analog component]*, Emile Zuccarelli reviews the "new picture generation" and comments on the agreement he just signed on behalf of the government concerning the use of the Telecom 2A satellite. Focus: the Europe of pictures, and Europe plain and simple.

[Salanne] You inherited two difficult cases: cable and satellite broadcasting of television programs. What kind of future do you think they have in France?

[Zuccarelli] Cable, as well as direct reception via satellite, are modern ways of receiving TV channels. I am convinced that they will become very widespread during the next few years. This, for two main reasons: they are the only ways of giving TV viewers both more programs (15 to 30 channels), which means more choice, and the television of tomorrow associating wide-screen 16/9-format broadcasting and the D2-MAC standard. This new picture generation, combining stereo sound, a large cinema-format screen, and better quality, is a springboard to high-definition TV.

Therefore, as soon as I assumed my present functions, I decided to try and provide real impetus for cable and satellite, which are not yet as well known as they should. And I wanted to do this so as to complement radio-relay broadcasting, and to meet reception constraints in both densely populated and rural areas as well as the increasing demand for quality service and program diversification.

[Salanne] A few months ago, at a ministers council, you introduced a series of measures to boost cable television. Have these measures started to yield results?

[Zuccarelli] The cable promotion plan is based on three arguments: simplicity for the subscriber, improved program offering, and better quality/price ratio. It is now being implemented: cable operators using Cable Plan sites have signed agreements with France Telecom that made it possible, already last spring, to lower subscription rates by an average of 15 percent, and to offer a product better suited to consumers' needs. The law that makes it easier to install cables in multiple-dwelling buildings was passed last June: it will make it possible to bring cable to most people, especially in subsidized housing projects. Finally, the cable decree, which constitutes the third facet of this plan, was just published: it allows cable operators to broadcast more movies, and it relaxes regulations concerning cable channels.

Obviously, you can't measure the success of cable television in three months: it took 30 years in the United States. But the first positive signs are beginning to appear: the psychological threshold of the millionth subscriber should be reached within the next few weeks, and cable operators have recovered their dynamism and their ambition, as can be seen from the promotion campaign they just launched. I am sure that the joint efforts of cable operators, France Telecom, and the local communities concerned will succeed. But cable television does not aim to cover the entire territory all on its own. Therefore, it must be backed by satellite television, which is its natural complement.

[Salanne] You have also just signed an agreement on the use of the Telecom 2A satellite.

[Zuccarelli] Telecom 2A, which France Telecom launched into orbit last spring, offers 11 channels to broadcast television programs. Enough to provide true impetus to direct satellite reception in France. I wanted Telecom 2A to meet two complementary objectives. First, to bring new channels to as many people as possible, especially in cable-less areas. Second, to act as a spearhead in promoting the new 16/9 format associated with the D2-MAC standard.

A few days ago, I signed an agreement that fully meets these two objectives: next to seven SECAM [sequential memory color system] channels, a standard now restricted to cable television, Telecom 2A will also broadcast four channels in D2-MAC 16/9. Starting next November, three channels—France 2, Canal Plus, and Cine-Cinema—will make an unprecedented 16/9 programming effort, reaching 20 hours per day by mid-93. A new channel entirely devoted to the 16/9 format is also under consideration.

Canal Plus will broadcast at least 80 percent of its movies in the new format, as well as its major sports events. Similarly, France 2, after broadcasting about 1,000 hours of 16/9 pictures in 1992, mostly sports, will further intensify its efforts and also broadcast most of its movies in 16/9 format. Thus, Telecom 2A will provide manufacturers with the attractive 16/9 programs that were lacking until now, and this will bring out the advantages of their large-screen TV sets.

I negotiated the agreement with the viewers' interest in mind. For instance, viewers will not pay more for 16/9 channels than for their SECAM versions. Similarly, if we reach an agreement with manufacturers, viewers will be able to rent D2-MAC satellite tuners instead of having to invest in the equipment. Starting in November, we are definitely going to enter the 16/9 era.

[Salanne] Will this agreement be enough to save D2-MAC?

[Zuccarelli] Better still, this agreement will ensure the future of D2-MAC. D2-MAC is the only standard that will make it possible to broadcast the new 16/9 format that will be in current use in five years from now. All that was still needed were pictures to show the new TV sets to advantage. Starting next November, pictures will arrive via cable and satellite, thus enabling France to lead the race.

[Salanne] What is Europe's contribution to HDTV?

[Zuccarelli] HDTV, as we are preparing it, cannot exist without Europe. Like all major technological projects, the European dimension is essential in terms of investment, research, and development.

HDTV originated in France, but it was thanks to manufacturers' cooperation under the European EUREKA research program that Europe was able to develop an advanced technology and enable our manufacturers to take the lead ahead of their American and Japanese competitors.

In the EEC, each country takes initiatives, and France holds a good rank. But each country can also feed on other member countries' brains and projects to further enhance its own capabilities.

[Salanne] European HDTV is on its way. But Europe also concerns the sectors that you are supervising.

[Zuccarelli] Of course. Europe offers development opportunities in all our sectors, the audiovisual sector as well as telecommunications and the Post. The Post and French Telecom are endowed with a legal status that gives them the means they need to adjust to changes in their environment, expand their activities, and strengthen at EC level their image of efficient and enterprising public services. More generally, I would like to recall that Europe is a grassroots dynamic movement. The Europe of technologies, economic Europe is already on its way. With the Maastricht treaty, Europe will progressively acquire the legal—and social—framework it needs to continue its development harmoniously.

In our sectors, as in many others, France has nothing to fear from Europe. The value of its men and women, the quality of its technologies, its central geographic position, and the influence of its culture guarantee it a prominent place within Europe.

[Salanne] Now that social reform at the Post and at France Telecom has completed two major stages, some wonder about the impact that the Maastricht treaty will have on already agreed-on social benefits.

[Zuccarelli] There is nothing to fear from the Maastricht treaty. On the contrary, it provides for appreciable progress in the social sector: safety at the workplace, workers' health, working conditions. It does not affect remunerations, nor the right to unionize or to strike. And it provides that each member State must retain its social standards. Besides, I would recall that the European Union Confederation approved the treaty. I would also recall that one of the best social protection systems in the world, ours, will serve as a reference for other member States.

As for the Post's and France Telecom's personnel, it is quite out of the question that the Maastricht treaty should pose the slightest threat to their status. They are government employees, and will remain so because that is a matter for France alone to decide.

Europe cannot remain essentially a trade group, nonexistent as far as currency is concerned, and politically insignificant. The Maastricht treaty aims to correct these faults of today's Europe. This is why we must resolutely head toward Europe. It is a long road, but it is our future.

Subscriber Distribution System for Fiber-Optic Networks

93WS0094J Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 12 Oct 92 p 3

[Unattributed article: "France: SECRE Unveils Molene for Subscriber Distribution on Optical Network"]

[Text] A subscriber distribution system for use on fibre-optic networks has been unveiled by the French company SECRE. The system, called Molene, is targeted at subscribers who require high flow rate digital connections with transmission quality offered by optical fibre systems.

The system enables up to eight subscribers to share a single fibre providing cost efficient data transmission without the

need for electronic equipment in the network. Features include: integrated protection of optical and electrical channels, flexible access and flow rates, together with encryption of data transmissions.

Molen has a range of 8km in a point-to-multipoint configuration, and 25km in point-to-point configurations. The system provides a capacity of 16 G.703 channels at 2,048Mbit/s with an additional potential for 48 channels at 64Kbit/s for specialised low and medium flow digital links.

The company says the system is designed for such applications as connecting subscribers' equipment to telecommunications networks, the interconnection of digital telephone exchanges and direct subscriber-to-subscriber links.

Molene was developed by the French Centre National d'Etudes des Telecommunications (CNET). An industrial version of the prototype system was put on trial by France Telecom in Paris in 1991 (see ITI issue 248).

SECRE is currently seeking UK distributors for the Molene system and can be contacted on + 33 1 44 89 45 70.

GERMANY

European High-Definition Television Criticized
92WS0766D Dusseldorf HANDELSBLATT in German
7-8 Aug 92 p 13

[Article by Georg Weishaupt: "High-Definition Television for the Museum"]

[Text] It must have been the Bonn Federal Art Gallery! The sophisticated ambiance with sculptures by Niki de Saint Phalle was just good enough for Philips and the DBP's [Federal German Postal Service] Telekom [Telecommunications Office] to extol the advantages of the European high-definition television system (HDTV). With direct telecasts from Barcelona displayed with a projector and a television set with a giant picture tube, the Eurostrategists wanted to prove that they, despite all the criticism, have a good grasp of the HDTV technology and that HDTV is coming, and very soon in fact.

It is, however, doubted that what the industry at present has on display in 80 showrooms throughout Germany "will be coming into consumers' private living rooms in about two years," as Philips manager Hans-Joachim Kamp announced in Bonn. So the industry is going to have to think up something before the television equipment market takes off. The bulky, heavy new television sets can scarcely be accommodated in the average two-room apartment without a lot of rearranging. Television sets with flat screens offered at correspondingly lower prices would certainly be more acceptable to consumers.

But still other obstacles lead us to suppose that the new HDTV world will not materialize so quickly in Europe. Up to now the HDTV strategists have not yet succeeded in clearing all the obstacles out of the way to getting the transitional standard, the D2-MAC, which makes it possible to telecast in a wide-picture format, accepted.

There is, of course, complete agreement among the industry, the transmitting facilities, and the film companies that films will be telecast in wide-picture format in the future. But only the industry sees the need for this to necessarily be effected in the European transitional norm for HDTV, the D2-MAC. And even with respect to this, the number of skeptics is growing, as is demonstrated by the latest statement by a Nokia manager who described the European HDTV system as a "dead duck."

The suppliers of public television programs in particular are in an awkward position. They have in fact already signed two German memoranda of understanding and another European memorandum in June. So far, however, aside from ceremonial manifestations, these memoranda have not yet produced any results. This is why the television equipment industry is now clinging to the European Commission's announcement that it will make ECU850 million in tax money available to program suppliers for the production of programs in D2-MAC and wide-picture format. But the EC Council of Ministers has not yet given them the green light. The British Government in particular has rejected the program.

In the event the funds are not released in November, none of the big channels will actually lose this subsidy. Not even Philips adviser Alfred Lambeck believes that the directors of the ARD [Working Association of the Public Broadcasting Corporations of the Federal Republic of Germany] and the ZDF [Second German Television] will become ardent admirers of the D2-MAC norm because of the money. "The program suppliers will not really begin to telecast wide-picture television programs" before 1995 if the current television norm is further developed with PalPlus. Because by then viewers will be able to receive programs in movie theater format via an ordinary home antenna, not as with the D2-MAC via satellite dish and receiver or via cable connection.

So, perhaps the unloved European HDTV technology will once again find its way into the Federal Art Gallery—but then forever.

Digital TV Awaits Development of Signal-Processing Chips

93MI0037A Bonn DIE WELT in German 8 Oct 92 p 9

[Article by Walter Schild: Tomorrow's TV Will Be Digital]

[Text] HD-MAC, the analog European high-definition TV broadcasting standard developed with a great deal of work and at considerable public expense, seems well on the way to becoming an expensive flop. For instance, experts were disappointed by the quality of the recent test satellite transmissions from the Barcelona Olympics.

There is an obvious alternative, however: digital transmission of HDTV [high-definition television] signals. Munich's Institute of Radio Engineering [IRT] has just demonstrated for the first time that digital signal transmission of an HDTV magnetic tape recording via a Copernicus satellite transponder is now possible.

The institute set up a direct visual comparison of the original recording and the satellite transmission: The specialist audience was unanimous in finding no visible difference from the original.

Using a new coding procedure, digital TV signals from, for instance, the planned high-output Eutelsat TV satellite could be received by dish antennae of no more than 90 centimeters' diameter; wired broadcasting would also be possible.

The catch lies in the sophisticated new chips that have to be developed specially for digital signal processing. Siemens's engineers do not expect them to be obtainable before the turn of the century. Given sufficient demand, however, their development could probably be speeded up. Analog HD-MAC broadcasting, which is clearly inferior, would then have just five years to establish itself. As IRT director Heinrich Wilkens puts it: "HD-MAC's time is running out." Skeptics would say it has already run out.

ITALY

Italian National Telephone Company Focuses on R&D

92MI0562A Milan ITALIA OGGI in Italian
3 Jun 92 p 13

[Text] SIP [Italian State-Owned Telephone Company] will invest over 160 billion lire in R&D activities this year. SIP president Ernesto Pascale, who made the announcement at a seminar organized by AEI [Italian Electrical Engineering and Electronics Association] in Palermo yesterday, stated: "R&D activities are a strong point for companies wishing to attain competitive positions against others working in the telecommunications sector."

Pascale continued: "The capacity for timely innovation against a backdrop of rapid technological evolution allows for otherwise unobtainable market shares to be conquered successfully." Research in Italy still remains a limited item in company budgets. "However," reminded Pascale, "the share of GNP allocated for R&D activities in Italy did rise from 0.8 to 1.3 percent between 1980 and 1990. Despite that increase, we are still far below the average of other industrialized countries where the share of GNP allocated to research and development is much higher: 3 percent in Japan, 2.8 percent in Germany, 2.8 percent in the United States, 2.4 percent in France, and 2.2 percent in the United Kingdom." And SIP? "Our commitment has grown over the years," said Pascale. "Between 1989 and 1990 it was 21 percent and 26 percent the following year thanks to contributions from the experimental electronics and telecommunications center."

Still on the subject of research, Salvatore Randi, Italtel managing director and AEI president commented. "That is fundamental in controlling production processes and company strategies in the telecommunications sector." After stating that Italtel spent 320 billion lire in research last year, roughly half of all Italian national research expenditure, Randi focused on the significant advantages resulting from the international agreement with AT&T signed three years ago. "Our catalogue," said Randi, "has been enhanced with the systems we are developing jointly with our partner." The Carini plant near Palermo is moving in the direction of producing UT line numeric switchboards and has its own software R&D center employing approximately 300 specialists.

NETHERLANDS

Philips Unveils New Public ISDN Telephones

92WS0773A Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE
in English 3 Aug 92 pp 4-5

[Text] Hilversum-based Philips Business Communications has launched a new range of digital telephone sets which can be connected to the public ISDN network. The new terminals, known as the N-range, will be made available in selected countries in Europe over the coming months and later in most other countries where its SOPHO-S range of ISPBXs are approved, said the company.

Philips says the new telephone sets comply with the European protocol ETSI and supplementary services standards. They offer improved call efficiency through such features as calling name/number identification, on-hook dialling/listen-in, call logging and speed dialling. Also available is a version with a built-in data interface providing easy access to ISDN-based data services and simultaneous voice/data communication. Voice and data calls can also be initiated from a PC equipped with an ISDN PC-card, such as the Philips PConnect. All models have a clear liquid crystal display for such information as off-line number preparation and calling name/number identification.

Philips N-range of terminals offers the same comprehensive features and functionality as the private ISDN P-range, introduced earlier this year (see ITI Issue 335).

The new line of public ISDN phones is the result of on-going ISDN pilot tests with PTTs in Belgium, Denmark, Portugal and the Netherlands, said Philips.

Enhancements for High Range PBXs...

Philips also announced a number of major enhancements to its SOPHO-S1025 and SOPHO-S2500 Integrated Services PBXs which primarily focus on users in an ISDN or DPNSS environment. Known as PR735.10, the enhancement package offers facilities and improvements with PBX configurations above 500 extensions, particularly in multi-node networking.

The enhancements include:

- Increased capacity—these adaptations offer a higher traffic performance and easier implementation of new facilities in the future. One of the major improvements is the increase in the number of simultaneous calls from 300 to 570.
- Queuing on Paging—the SOPHO-S PBX can automatically send the caller's identity to pagers equipped with a display, and the paged number can be displayed on a SOPHO-SET feature phone. A number of other new paging features have also been added.
- Full break-in by Operator—a unique feature which enables the operator to reach a user even when the Camp-on-Bus queue is full.
- Open ISDN Interface—PR735.10 offers a solution for accessing ISDN applications and connecting feature-rich SOPHO-SET telephone terminals to the

SOPHO-S ISPBX through only one extension interface. Known as the S_o Combi-Bus, the interface combines the benefits of ISDN and telephony without additional costs. In addition, the new PNT1 Private Network Termination extends the connection distance of such terminals by up to 2 km and can also be used where existing 2-wire cabling does not allow for the connection of 4-wire terminals.

- DPNSS Enhancements—including Centralised Operator, Charge Reporting and Loop Avoidance.
- VN2 Type Approval in France—In addition to 1 TR6 in Germany and DASS II in the UK, SOPHO-S ISPBXs can also be connected to the ISDN in France by supporting the VN2 protocol. This, claims Philips, makes the SOPHO-S range of ISPBXs the first to provide connectivity to the three commercial ISDNs available in Europe.

Philips To Launch Multistandard Transmission Chip

93WS0094K Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE
in English 12 Oct 92 pp 3-4

[Unattributed article: "Netherlands: Philips To Launch Multi-Standard Transmission IC"]

[Text] The universal telephone could soon be a practical reality thanks to a new programmable line interface IC soon to be launched by Philips Semiconductors.

Designed by FASELEC A.G., Philips's partly-owned Swiss subsidiary, the PCA 1070 is intended for use in telephones, facsimile transceivers, cordless telephone base stations and other simple attachments to public switched telephone networks and can be programmed to meet the technical parameters for connection to any country's telephone system.

Ton van Kampen, Telecom Product Marketing Manager, says the chip will be available for sampling before the end of 1992. Projected price for the device in lots of 10,000 will be FL6.5 (2.39 pounds sterling).

Van Kampen describes the PCA 1070 as a multi-standard transmission device, and says it will allow PSTN terminal manufacturers to design a single circuit board for their products rather than using specific layouts tailored to the requirements of individual telecommunications approvals administrations.

"It performs all speech and line interface functions needed in an electronic telephone and requires just a handful of external components," he told ITI.

He explains; "Transmission parameters for each country network are stored as values in EEPROM, and are downloaded into the chip by an associated microcontroller each time the phone goes off-hook." As many as 26 parameters such as line voltage, impedances, sidetone balance and audio amplification, can be programmed with the accuracy demanded by national network operators, van Kampen asserts. In Europe that means using the specifications set out in European Telecommunications Standard ETS 300/001 which sets out parameters for connection to the PSTNs of each of the members of CEPT.

Currently the market for line interface circuits is running at a rate of some 30 million pieces a year, van Kampen estimates.

NORWAY

Siemens To Supply Norwegian GSM Network Infrastructure

93WS0094B London MOBILE EUROPE in English
Sep 92 p 14

[Unattributed article: "Siemens To Supply Norwegian GSM Network Infrastructure"]

[Text] NETCOM A/S, Norway's private mobile communications operator, has awarded a DM90m (ECU [European Currency Unit] 44.2m) contract to Siemens AG to design, install and commission its GSM cellular network.

The new network will be operational by the end of 1994, and will provide coverage for almost 90 percent of the country. Initially 100 GSM transmitters will be installed in the country of 342,303 square kilometers.

Erwin Fellner, a spokesman for Siemens AG's public communications networks division, says that Siemens is delivering a full turnkey system to Netcom, which includes switches, transmission and operation centres, the construction and erection of masts, radio and terrestrial network planning, technical assistance and project management.

"With GSM technology in the 900MHz and 1.8GHz band, we in Europe now have a high-capacity, low-cost uniform technology for the first time, which is able to meet market demand over a long period," said Dr. Hans Baur, executive vice-president of Siemens AG. "The design of this system, with macro, micro and pico cells is ideally suited both to the open countryside and to conurbations."

Towns in the south of the country will initially be connected to the GSM network, including Lillehammer, the venue for the 1994 Winter Games. Norway is a large user of cellular telephones, with 55 units per 1000 inhabitants.

Netcom is Scandinavia's third mobile network operator that chose Siemens to install network infrastructure, and follows Comvik (Sweden) and Radiolinja (Finland).

SPAIN

Use, Financing of Communications Satellite

93WT0002A Madrid CAMBIO 16 in Spanish
14 Sep 92 pp 40-42

[Article by Maria Jose Albarracin: "Hispasat Puts Spanish Language in Orbit"]

[Excerpt] [Passage omitted] Taking a step forward in communications required close to 60 billion pesetas. "This is a profitable investment. Besides the anticipated economic benefits, Hispasat offers strategic-military and technological-scientific advantages," say the heads of the Hispasat partnership. If forecasts are borne out, the cumulative gross profits will top 150 billion pesetas over the satellite's 10-year useful life. But the final net profits will exceed only 45 billion pesetas.

The problem is that the profitability of this space "toy" depends on the amount for which its services can be leased, especially by TV stations, which are not doing too well financially. Thus, Hispasat is not a completely sure thing as a business venture.

Nevertheless, the Spanish satellite has a number of features that make it one of the most technologically advanced. The system consists of two satellites: Hispasat 1A, which will be the first to be launched into space, and its twin, Hispasat 1B, which will go into orbit next April. A small dish antenna will enable people to receive five direct-telecast channels, 16 channels with fixed services (telephone, data base, or electronic journalism, among others), and two channels, aimed at the Americas, that will cover from New York to Buenos Aires. The latter two will allow for a reciprocal flow of information 24 hours a day. The Association of Ibero-American Educational Television was established recently to broadcast programs by satellite from both sides of the ocean.

Hispasat, a complex device that weighs 2,100 kilograms and measures two meters wide by two meters long (when its solar panels are deployed, it enlarges to 22 meters), has one novel feature: It will perform several missions. Civilian and government functions are being combined for the first time in a single satellite, something that neither the Europeans nor the Americans have done. Hispasat will be performing a military surveillance and communications mission under the Seconsat program, which the Defense Ministry is coordinating.

The satellite's coverage is ideally suited to Spain's geography, and it will put out a stronger signal. As a result, stations can be simpler, and the dish antennas for receiving the broadcasts can be smaller and less expensive. In addition, the Hispasat system will enable Spain to view high-definition TV.

The first official step toward enabling Spain to have a communications satellite of its own was taken on 7 April 1989, when the Council of Ministers decided to establish the Hispasat partnership. The company, which has capital of 20 billion pesetas, is subscribed by Retevision (25 percent), Telefonica (25 percent), the Post Office Savings Bank (22.5 percent), INTA [National Institute for Aerospace Technology] (15 percent), INI [National Institute of Industry] (10 percent), and the Center for Technological and Industrial Development (2.5 percent).

Several lending institutions were involved in financing the project, including the European Investment Bank, which granted a 21-billion-peseta loan, and the Official Credit Institute (ICO), which put in another 6 billion.

Doing Business in Space

The satellite was manufactured by the French firm Matra, which in turn handled the subcontracts with the other firms involved in building it, such as Alcatel Espacio and Telecomunicaciones y Control, an affiliate of Telefonica.

The launching of Hispasat has put Spain into the satellite business, where the market is highly competitive. Up to now, Spain has handled its telecommunications mainly by leasing time on satellites such as Eutelsat (European coverage) and Intelsat (intercontinental hookups).

But before it can start satellite broadcasts and lease one of the channels that Hispasat has to offer, the government will have to pass the bill regulating satellite and cable television. Hispasat's potential clients—public and private TV networks, among others—have already expressed an interest in leasing Hispasat services; such leases will cost approximately 400 million pesetas a year for the 16 fixed-service channels and 700 million for the five direct telecast channels. The dish antennas needed to receive the broadcasts on the ground will cost some 70,000 pesetas.

Hispasat will remain at Kourou space center until it is launched there at "zero hour" on the 11th. In attendance will be Prince Felipe; Jose Borrell, minister of public works and transportation; and Elena Salgado, the president of Hispasat and secretary-general of communications.

The satellite will be riding on an Ariane 44L rocket, built by the firm Arianespace, which has been launched 15 times since February 1990.

Insured for Millions

To reassure all of the parties involved, the Hispasat partnership has taken out insurance on the launching of the two satellites with a group of 16 insurance companies, headed by Hercules Hispano and Musini. The premium is 6.5 billion for an asset insured at 37.5 billion.

The countdown begins 12 hours before 0104 hours (Spanish time) on the morning of 11 September. When the rocket reaches the appropriate velocity (some 35,000 kilometers an hour), the capsule housing the satellite will be released. From that moment on, the Arganda Satellite Control Center in Madrid will be in charge of maintaining the satellite's fixed position, 36,000 kilometers over the Iberian Peninsula.

Hispasat will be ready to perform its mission in the virtual vacuum of space, traveling at 302 kilometers a second and enduring extreme temperatures ranging from 150 degrees in the sun to minus 260 degrees in the shade.

After its 10-year life, as the fuel that holds it at its fixed point runs out, Hispasat will gradually move into more distant orbits. It is unlikely that the satellite will fall to earth in less than 150 years, but if it does, it will disintegrate on contact with the atmosphere.

[Box, p 42]

A Satellite Without a Legal Shuttle

With just a few hours to go before the Ariane that will shuttle Hispasat into orbit is launched, we still do not know when the government will approve the satellite- and cable-television law that will regulate most of the satellite's operations. The Executive Branch will have to hurry, or Hispasat will be in orbit without a legal framework.

The satellite has a very short service life—10 years. The Hispasat partnership has that amount of time to amortize costs, pay back its loans, and assess the results. But everything depends on the law.

The various TV networks, both public and private, are not venturing any firm offer on one of the five television channels the satellite has available for fixed service until they are familiar with the rules by which they will have to

abide. And, for the time being, all indications are that the future law is going to cause a lot of problems.

The private networks complain that the Executive Branch failed to consult them in drafting the first version of the bill. The state-run TV station says that maintaining satellite channels will be very complicated financially. The state-run enterprise, which is going through one of the most critical periods in its history—facing an employment-regulation proceeding, posting losses in the millions, and having trouble getting the publicity it had when it was a monopoly—knows what it costs to keep broadcasting outside of Spain.

At present, TVE [Spanish Television] broadcasts special programming over the Intelsat and Eutelsat satellites 18 hours a day to the Americas and an additional 18 hours to Europe. The director of TVE's international-channel programs, Miguel Blasco, takes stock. "The satellite leases are not all that has to be paid for; there are other expenses, like acquisition fees. You do not pay the same for a film that is going to be viewed only in Spain as for one that is also going to be seen in Latin America."

The private TV stations, which are not doing very well financially, either, say that "if we cannot broadcast advertising, we have had it. The leases for five direct telecast channels are too expensive—700 million pesetas—and, unless we can finance the cost through advertising, we are going to have a very rough time maintaining a satellite TV station. In any event, we have to wait for the law," Tele 5 says.

The same goes for the autonomous-community stations. Radiotelevision Madrid, which is in "legal bankruptcy," as some members of the board of directors have described it, cannot consider having another channel. The other third-party channels are also waiting for the law to come to light.

The General Secretariat of Communications acknowledges that the lack of firm offers for satellite TV is due to the absence of a law.

While they wait for the law to decide whether advertising will be allowed, both groups are hankering for another piece of the future "advertising pie," which has been divided up so often since the appearance of private TV stations and of which so little will remain if five new TV channels emerge, even if they are satellite channels.

SWEDEN

Ericsson Success in Japanese Market Outlined

93WT0008A Stockholm SVENSKA DAGBLADET
in Swedish 9 Oct 92 p 22

[Article by Soren Granath: "Ericsson Brings Home the Third Telephone Order From Japan"]

[Text] In a short period of time, Ericsson has brought home the company's third key order for the Japanese market.

"This confirms our breakthrough and meets the goal we had set for getting into the Japanese market," says Hakon

Enquist, marketing chief for the Ericsson Mobile Telephone Systems business unit in Japan. "Along with the orders we received earlier in the year, our system will cover 70 percent of Japan."

In May this year Ericsson received the first order for digital switches for cellular telephones from Japan; this time it was for the Tokyo area.

In July, Ericsson picked up an order for the next largest city, Osaka. And now, Ericsson succeeded in winning the bidding for Japan's third largest population center, the Nagoya region. The last mentioned order is worth 518 million kronor, and together with the previous two, the amount is 1.8 billion kronor.

The order was brought in by a joint venture company of which Ericsson owns 60 percent. The other partner is the Japanese company Toshiba. The majority of the orders for digital switches, radio equipment, and peripherals, will be delivered from Sweden.

Japan is highly valued among the world's telephone companies, as sales are expected to greatly increase in the future. According to Hakan Enquist, 1 percent of the Japanese population has a cellular telephone. In Sweden, where the development has gone much farther, 8 percent of the population has a cellular telephone.

Ericsson Launches New Telecom Products

93WS0073E Chichester EUROPEAN
TELECOMMUNICATIONS INTELLIGENCE
in English 19 Oct 92 pp 4-5

[Unattributed article: "Sweden: Ericsson Launches New Products at Europa Telecom"]

[Text] Attending the Europa Telecom '92 exhibition in Hungary last week, Ericsson launched a modular radio access system that offers an alternative method of connecting subscribers to new or existing local networks, using radio links instead of copper wires.

Using a radio air interface based on the Nordic Mobile Telephony (NMT) standard, RAS 1000 interfaces directly with local exchange equipment to provide fixed subscriber connections over radio links via a radio base station.

To the user there is no difference between using a telephone connected by radio and one connected by cable. Standard telephone equipment is plugged into a socket on the wall in the usual way, and a radio transceiver takes the place of the ordinary cable junction box.

The local exchange also treats a subscriber connected over radio in exactly the same way as one connected by cable. All signalling and translation tasks required to set up calls over the radio link are handled by the RAS 1000 itself.

With RAS 1000, new connections are made simply by installing a user terminal and switch interface. Reconfiguration of the subscriber network is also greatly simplified. In metropolitan areas, for example, the system could be used to provide extra capacity on demand for business users.

Ericsson is offering RAS 1000 as a modular package. Radio access capacity may be added to the local exchange

in 30-channel stages. A 30-channel connection would provide enough capacity for around 300 subscribers, while a 90-channel system could serve up to 1,200 subscribers, says Ericsson. No modification of the local exchange is required.

The system comprises: a switching interface module (SIM), which interfaces with the local exchange and performs radio channel switching; a translator module, which controls base station and performs signalling functions; a radio base station; and user terminals. A PCM multiplexer is also required between the SIM and the local exchange if the exchange is analogue.

RAS 1000 may be operated in the 380-500 MHz range or the 800-1000 MHz range. There are also plans for the introduction of a version of the system for use in TACS-based networks to provide 450 MHz fixed radio access within existing cellular infrastructure.

Launches New Cellular Mobile System for NMT 450 MHz...

Ericsson also launched a new version of its NMT 450 MHz cellular mobile network, called NMT 450I. New features in NMT 450I include: Improved call completion and quality monitoring facilities; subscriber identity security (SIS) caller authentication; smaller, higher-capacity radio base stations, and improved speech quality through the use of compandors.

NMT 450I is based around Ericsson's AXE switch for mobile telephone networks. The MSC software will be upgraded to include subscriber authentication and priority subscriber facilities, improved speech quality and call capacity for small-cell networks, new signal strength supervision procedures, new umbrella cell concept, a traffic levelling function, and handover request channels. The MSCs are able to handle both NMT 450I and earlier NMT 450 subscriber categories.

A new radio base station for NMT 450I, called RS4001, has been introduced by Radiosystem Sweden AB. Its main features include double channel capacity over existing systems (increased from eight to 18 channels per transceiver), autotuned combiners, the use of compandors and automatic control and adjustment of transmitter power. In addition, many maintenance tasks can be carried out remotely via a modem link, or locally using menu-based software on an industry-standard PC.

UNITED KINGDOM

UK Firm Develops First X.400-Compatible EDI Software Package

92WS0807J Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 24 Aug 92 p 4

[Unattributed article: "United Kingdom: First X.400-Compliant EDI Software Package Developed"]

[Text] The London-based telecommunications and software house, Telesmart Developments Limited, claims to have

developed the UK's first electronic data interchange (EDI) software package to be compatible with the latest P.7 version of the X.400 international communications protocol.

The new addition to Telesmart's ATLAS EDI product, ATLAS EDI X.400, will allow transmission of EDI messages over X.400 telecommunications networks. It was created, the company says, by combining Telesmart's ATLAS EDI software with the X.400 Remote User Agent (RUA) software developed by Alprange Communications Limited.

Telesmart believes that the X.400 standard will now take off after years of "wait-and-see" by the major IT vendors and users.

As its use spreads, X.400 should eventually put an end to the problem of incompatibility between systems. It will allow users of any product, whether PC, mini or mainframe, regardless of operating system (DOS, UNIX, VMS, PICK, etc.) to send and receive from any other system anywhere in the world, any sort of data, whether it be invoices, electronic mail, speech or images.

It is likely that Value Added Networks (VANs) will take on X.400 and will be forced to communicate with each other, thus allowing users, who have previously been tied exclusively to a single VAN, to reach the users of any other VAN worldwide.

Telesmart's Chairman Cyril Block explained: "ATLAS EDI X.400 will make users X.400-compliant while still giving them immediate access to all the major UK Value Added Networks via standard methods. Acceptance of Open Systems Integration standards is growing. The financial telecommunications networks will soon start to use X.400 for electronic funds transfers and the use of standards such as EDIFACT will further facilitate this. It is also likely that X.400 will be used for funds transfers between the European automated clearing houses such as the UK's own BACS [Bankers' Automated Clearing Service]."

UK Firm To Market World's First Hybrid Cordless Phone

93WS0073F Chichester INTERNATIONAL TELECOMMUNICATIONS INTELLIGENCE in English 19 Oct 92 p 5

[Unattributed article: "United Kingdom: GPT CSL Announces World's First Hybrid Cordless Phone System"]

[Text] GPT Communication Systems Limited (CSL), the jointly-owned Siemens/GPT UK marketing and services company, has announced the commercial launch of what it believes is the world's first cordless hybrid CT-2-based telephone system specifically designed for small to medium-sized businesses.

The ISDX 100 supports up to 100 fully-featured CT-2 cordless handsets in addition to a combination of feature-phones and low-cost standard phones. Incoming calls can be dealt with by either a single operator or taken by several pre-assigned staff, while dedicated lines can, for example,

allow service calls to pass directly into a service department. In addition, a sales department may be given access to the majority of outside lines and keysets while accounts could be configured to have limited line access and ordinary telephones. Flexible secretary/manager working can be accommodated and it is also possible for a single secretary to serve several managers.

The range of management features offered by the system include call logging and five levels of call barring from full

international access to only '999' calls. For the user, it offers speed dial of 120 20-digit numbers and will support conference calls with up to four individuals. Feature-phones provide text messaging to inform internal callers of a user's whereabouts, while hands-free answer-back saves a user from picking up the handset to answer either their or a colleague's internal calls. Paging a particular work group to locate individuals is also permitted through the feature-phone's internal speaker.

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